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ABSTRACT

The Dallas Independent School District provides this handbook presenting administrative, planning, design, and technical guidelines for those involved in the design and construction process of new school facilities, and expansions or renovations of existing schools. It focuses on the design specifications and administrative guidelines for the construction of a new elementary school. Included is a listing of technical master specifications sections developed by the school district to convey specific detailed recommendations for all construction elements. All of the requirements included can be categorized as one of the following types: (1) general considerations that guide the architect and contractor in setting the overall design concepts of the school; (2) space requirements that describe the number of spaces and their size requirements (minimum width, height, and length); as well as detailed information about each individual space. An appendix contains lists of equipment that may be included in each individual space. (GR)

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DISD

## The Dallas Independent School District

# SCHOOL DESIGN HANDBOOK

For all Dallas Public Schools Construction Projects

**Section I:** Educational Specifications, Elementary School Program

**Section II:** Administrative Guidelines and Procedures

**Section III:** Technical Design Guidelines

**Approved by the Board of Education on April 12, 1994**

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Dallas Independent School District

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## INTRODUCTION

This handbook is an administrative, planning, design and technical guide to Architects, Engineers and District staff engaged in the Design and Construction processes necessary for the implementation of new school facilities, additions to, and renovation of existing facilities. It is presented in three sections to provide District input to the designer in all planning, design and construction related elements normally associated with school construction projects.

- **Section I: Educational Specifications, Elementary School Program**
- **Section II: Administrative Guidelines and Procedures**
- **Section III: Technical Design Guidelines**

Adherence to this handbook is necessary to supplement rather than limit the professionals' expertise, experience, innovative processes and creativity. Recommendations by professionals which enhance the delivery of quality educational facilities are encouraged and will be evaluated by the District to determine their benefits relative to the educational mission of the District, economy of design, life cycle costs analysis, and energy conservation.

As new technology develops and innovative new construction products and techniques become available, this document will be updated to ensure Dallas Public Schools are constructed as state-of-the-art facilities. Changes and updates will be issued whenever they are in the best interests of the District. Minor changes not involving concepts or established policy may be made periodically by the Administration. Significant changes impacting existing concepts and/or policies will be presented to the Board of Education for approval.

Included in this handbook is a listing of technical master specifications sections developed by the District to convey specific detailed recommendations for several construction elements. These technical specifications will be made available to Architects and Engineers, upon request, for their perusal and will be used by District staff for reference during review of specific project submittals. They should not be incorporated verbatim into project specifications and the District accepts no responsibility for their appropriateness or technical accuracy. Development of construction specifications suitable for the bidding, award and construction of school projects is the responsibility of the Architect/Engineer of record. Administrative specifications including bidding requirements and conditions of the contract will be prepared by the District and furnished to the design professional to be incorporated into the project manual.

Nothing in this handbook is intended to limit the competitive nature of the construction process nor the concept of fairness and equal opportunity in all endeavors of the District. Design professionals are reminded of the public nature of funding for school facilities and the multi-cultural society that is....

**Dallas Public Schools**

The Dallas Independent School District

# ELEMENTARY SCHOOL PROGRAM
# EDUCATIONAL SPECIFICATIONS

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* This information will be provided at a later date.

## GENERAL DESCRIPTION

### Introduction and Use of This Document

As part of it's Facilities Bond Program, the Dallas Independent School District (DISD) plans to construct Elementary Schools to house approximately 800 students each.

This document contains the programmatic information necessary to begin designing a new Elementary School. The programmatic information will also be used as supplemental information in the design of several additions to existing elementary schools.

In addition, DISD will be constructing a new middle school, high school, and renovating many of it's existing schools. Information about these other projects is contained in separate volumes.

This document should be used with two other sections entitled "Technical Design Guidelines" and "Administrative Guidelines and Procedures" which contain further information and details necessary for the design of the elementary schools and the process used during the design and construction of each project.

### Executive Summary

The Dallas Independent School District has begun a program entitled the Facilities Bond Program to renovate many of its existing schools and construct a number of new schools throughout the district.

This document is an architectural program and list of educational facilities' specifications for the design of one component of the Bond Program, a new elementary school.

This school is designed to house approximately 800 students in grades Pre-Kindergarten through 6th, plus additional special needs students.

All of the requirements included herein can be categorized as one of the following types:

- **General considerations** that will guide the architect in setting the overall design concepts of the school.
- **Space requirements** that describe the number of spaces and their size requirements (minimum width, height and length).
- **Detailed information** about each individual space.

This book is organized as the architect will use it with the most general information first, gradually increasing in detail to an appendix which contains lists of equipment that may be included in each individual space.

### Goals

The primary goals for the Facilities Bond Program are to design and construct new facilities and renovate existing facilities of the highest quality possible within the established budgets and schedules. Because bond monies have been allocated and new sources of revenue and realignment of existing budgets are not possible, analysis of cost alternatives should be explored in determining the most effective way to provide DISD with the best possible product.

Similarly, schedules must be met. Schools which are delivered out of sequence with the "educational year" will place unnecessary burden on already strained existing schools.

The schedule requirements for the Bond Program are contained in a separate document entitled "Program of Work.".

Secondary goals for the Bond Program address how the new facilities are designed, how they function and how they are perceived.

The design of the school must provide an aesthetically pleasing atmosphere conducive to the learning process. The design should eliminate obstacles and distractions to the learning process. The distribution of spaces should enhance the many functions which take place within the facility.

The design shall be developed to implement the District's Youth and Family Service Center which requires that the gymnasium, auditorium, 4 classrooms and appropriate restrooms be so designed to function with independent environmental control. This area must also be able to be readily "locked-off" from the rest of the school.

The school should instill a sense of pride in the community. Local citizens should identify with it as a flagship of education in their neighborhood.

The building should promote a feeling of "belonging" for the people who use or come in contact with it. The children and school staff should feel comfortable using it and the public should have no reservations about visiting the school.

The facility must be durable and require minimum maintenance. Materials, products, and methods of construction should be selected based for achieving the best possible performance over time within the constraints of the budgets.

## Definition of Key Terms

The following terms are used throughout this report. Additionally, an abbreviation list is included in the Appendix.

Square Feet (S.F.)
The common method for measuring the floor area of a school can be expressed as:

**Net Square Feet or N.S.F.** is the area within an individual room, such as a classroom that measures 25 ft. x 30 ft. inside has 750 n.s.f.

**Gross Square Feet or G.S.F.** is the total area to be constructed. It is the sum of all of the net areas plus allowances for corridors and circulation, restrooms and spaces necessary to the building such as mechanical rooms, janitor's closets, wall thickness, etc.

In this program it is assumed that 75% of the gross area is allocated to net spaces, and the remaining 25% is for other items listed above.

The architect should diligently strive to increase the net percentage. When this occurs, the resultant space should be used to enhance the educational programs.

Learning Center Concept:
This concept is an instructional method to be employed in these elementary classrooms. Each classroom contains furnishings arranged in small groups for different activities to take place. For instance, a Kindergarten room contains the following Learning Centers where students engage in hands-on experiences based on the following topics:

- Art Center
- Home Center
- Building Center
- Reading Center
- Math
- Science

Primary:
Refers to the first, second, and third grades.

Intermediate:
Refers to the fourth, fifth, and sixth grades.

## SCOPE AND BUDGET REQUIREMENTS
PROGRAMMING CONCEPTS

### Population and Scheduling

Different elementary schools within the DISD currently offer several combinations of grades from Pre-Kindergarten through 6th grade. The current policy is for the school hours to be from 8:00 a.m. to 3:00 p.m. Monday through Friday. The buildings will however be used for longer hours. Such events may include breakfast programs, activities incorporating unsupervised children and for community activities, often occurring after hours.

Each new elementary school should be designed to house 800 students. However, this is only the target population. In reality, an elementary school must respond to the changing population of the neighborhood and district which it serves. Therefore, the architect should design a school which the core service population can be expanded to service additional students.

Under the Texas Education Code, maximum of 22 students may be enrolled in any class in Pre-Kindergarten through 4th grade. In the 5th and 6th grades, DISD policy advocates 27 students per class. Given these limitations on the numbers of students in each classroom, the school should be designed in accordance with the criteria identified in the List of Required Spaces.

### General Building Criteria

It is the desire of DISD to insure that every building reflects the values and architecture of the community it serves. The District wants architects to provide buildings to which the people will point with pride, buildings that will upgrade the surrounding area and that will become the center of neighborhood activity. Members of the community will be involved as part of the design team.

The District expects to move away from direct instruction and towards more "facilitating of learning". For a program of this sort to work, facilities that make it easier for teachers to work together must be planned. This includes providing work spaces, conference areas, and classroom areas where cooperative work can take place.

In grades Pre-Kindergarten through 2nd, the classrooms will be made up of a series of "learning centers" where the students can work individually or in small groups for varying periods of time.

The design of the facility should reflect that the school is an important community building.

While not necessarily monumental, a public elementary school should convey permanence and significance and stand the test of time. On the other hand, it must be inviting, have a human scale, and welcome everyone including first time attendees. It should not be intimidating. The entry should be obvious and the design should convey a sense of place and arrival.

All classrooms will have full height walls with doors. DISD does not want elementary schools to be "open plan" concept.

Also, the new school should not have open, exterior corridors. All interior circulation should be enclosed and air conditioned.

All of the classrooms should have natural light and a view of the outdoors. Windows should make the view accessible to elementary-sized students.

To the fullest extent possible, design the facility to reduce operating and maintenance costs.

All areas of the facility that are to be used by staff and students will be wheelchair accessible and conform to all applicable statutes and regulations and Americans with Disabilities Act (ADA) requirements.

The facility will be designed with several "special populations" rooms to meet the needs of special education students. These students should be mainstreamed with the remainder of the student body and not isolated. Do not segregate the special populations rooms in any way from the rest of the classrooms.

### Flexibility

The schools built today must serve the students of DISD well into the 21st century. During the life of these buildings, curriculum needs, teaching techniques, even student populations are likely to change several times. It is essential that the buildings constructed today be able to adjust to changes that will come in the future. Equally important, they must be constructed in such a way that they will not inhibit proposed or needed changes. Provide sufficient room within classrooms and other student use areas to allow for changing programs. While this is the ideal, flexibility of systems and spaces is preferable to oversizing of rooms due to budget constraints. For example, use as few different room sizes as possible.

### Expandability

The architect should assume that DISD may one day choose to increase the student population at the new school by expanding the permanent building or by moving transportable, temporary classrooms onto the site and that "Fire Lanes" and "Fire Hydrants" may be required to serve these "transportables." Identify where anticipated "future" additions may be located.

The initial design should anticipate this and provide a way to expand the following "fixed" spaces:

- Library/media center
- Cafeteria/Kitchen
- Student restrooms
- Mechanical Systems
- Parking Lot
- Administrative Areas

Obviously any future expansion or "transportables" would take up space on the site, but by anticipating the future, the architect can leave space for change, and provisions for expansion or extension of Heating, Ventilation, and Air Conditioning (HVAC) systems.

### Maintainability

The initial cost of a building is far less than the costs involved in maintaining a building over its lifetime. The decisions made during the design should be based on considerations of life cycle costs or the cumulative cost of an item or building system over its life span as well as the original cost.

### Convertibility and Other Uses

The schools built during the 1990's will probably still be standing for 50, 75 or even 100 years. It is easy to understand that even the most flexible school building will be challenged to keep pace with educational theories over such a long time span. During the Design Development, the Architect shall furnish simple schemes to show possible alternative uses, e.g. housing, offices, art centers, etc.

The design of the school should not preclude it from being used to house a radically different function. For this reason, the architect should design a facility that is not only flexible but could be converted to another use at some time in the future.

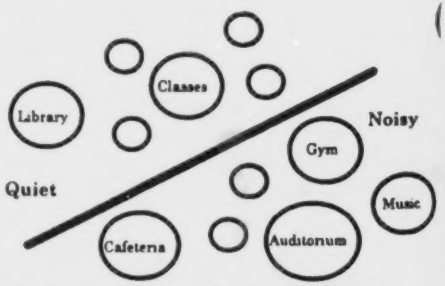
### Spatial Organization and Relationships

Whether or not a new school is regarded as successful is dependent to large degree on the relationship of the various spaces to one another.

Interior Spaces

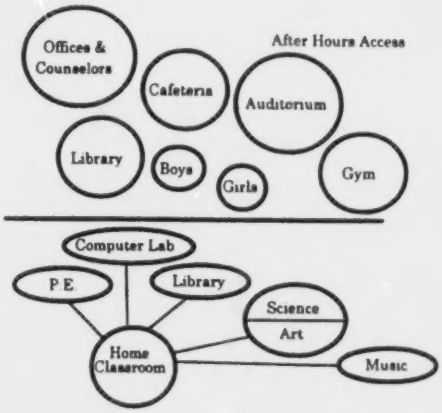
- Interior spaces can generally be categorized into teaching, administrative, and support spaces. Teaching spaces include classrooms, as well as other spaces used as teaching stations, such as the auditorium, gymnasium, computer lab, library/media center, science room, and the fine arts room. Administrative spaces include offices, reception areas, administrative support, and conference rooms. Support spaces include the cafeteria/kitchen, workrooms, special services, storage, and restrooms.

- Interior spaces can be divided into quiet zones and noisy zones. Spaces which would be included in quiet zones are the classrooms, the library, and offices. Spaces which would be included in the noisy zone would include the cafeteria, the auditorium, the fine arts room, the music room and the central mechanical plant.



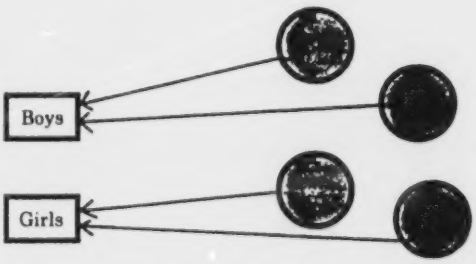

- Additionally, the cafeteria, gymnasium and the auditorium will have higher ceilings than the rest of the spaces in the prototype. Consider placing these two spaces adjacent to each other for a possible cost saving design.

- The cafeteria, auditorium, gymnasium, office/counselor's office, clinic, some classrooms, and a set of restrooms will be used after school hours for special programs and by unsupervised children. The library may also be used for PTA and faculty meetings in the evening. Design these rooms so that the rest of the school can be made secure while still allowing access to these areas.
- Classrooms should be grouped and in close proximity to one another. Separation of Pre-Kindergarten and Kindergarten from the upper grades is desirable as is the provision for separate primary and intermediate areas. All students will move from their home classroom to the cafeteria. All students except for Pre-Kindergarten will also move to the library and to the gymnasium for P.E. In addition, 3rd through 6th grade students will move to the art/science room as well. Easy access between these areas and the home classrooms is essential.




- The number and location of student restrooms is a function of the design of the school. However, the restrooms must be located near the classrooms and so that a teacher can take a class to a spot corridor location and watch both boys and girls entering their respective restrooms. Teachers need to be able to monitor both boys and girls at the same time. Separate restrooms are not places for children to congregate and play, and "walk through" restrooms that have doors on two corridors are not permitted. Entry areas should be "doorless," similar to those found in airports.

- Dedicated restrooms will adjoin each Pre-Kindergarten and Kindergarten classroom. "Walk through" restrooms that have doors into two classrooms are disruptive and should be avoided.




- Custodial workrooms and storage should be distributed throughout the school to allow for easy cleaning and maintenance.

Exterior Spaces

- The program calls for a minimum of four acres of playing fields, plus hard-topped play space, Kindergarten playgrounds, and exterior garden areas in addition to paved areas for vehicular circulation and parking.

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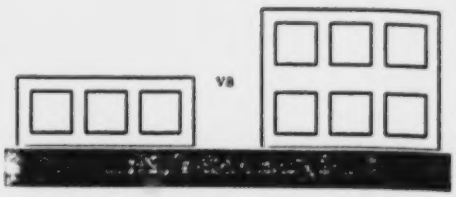
- Although the District has a goal for an 8-10 acre site for elementary school as a minimum, some sites will be smaller due to availability and feasibility due to costs, in these locations the architect should consider preserving exterior open space by designing two-story schools. The relationships shown in this document assume one-story construction (which would be favored if site size were not a factor). The architect will determine which, if any, modification must be made in a two-story versus a one-story configuration. In two-story designs, the lower grades must be on lower level.




- The playground, gardens, and sports fields should be located to the rear or side of the site. Access should be through the building and through the chain link fence that surrounds the site. The playing fields may be used after hours by the community for organized sporting events or by individuals (jogging, etc.).

- Runoff from rainstorms must be retained on site. The architect is responsible for compliance with the Dallas County Flood control regulations. Drainage retention shall not make building inaccessible while runoff dissipates.

## Site Access and Circulation

Access to and access from the site and into the building is critical to the design of the school. This need is magnified by the number of different types of users including: students (arriving by bicycle, on foot, by car or by bus), teachers and staff, parents, deliveries, service, and at times, emergency vehicles. Because of limited site sizes, the architect should not only design a site lay-out that separates the various types of traffic, but also strive to keep as much of the site open and unpaved as is feasible.

Consider the following when designing new schools:

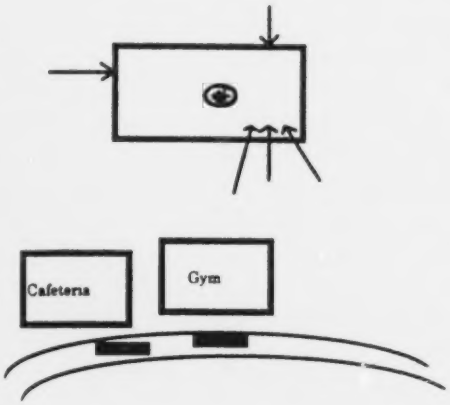
- Access onto the site should be logical and easily discernible for those who will use it.
- Vehicular circulation should be simple and one-way to reduce the chance for accidents.
- Access patterns should restrict pedestrians from crossing vehicular traffic lanes whenever possible.
- School bus drop-off and parent drop-off should be separated and well defined to reduce confusion and congestion.
- Separate parking areas should be provided for visitors and faculty.
- School bus drop-off lanes should be used by school buses only, not by service vehicles, visitors or carpools.
- School bus loading area should be designed with one-way access so that school buses can safely enter and exit and that school buses will not need to back-up and children do not need to walk across bus lanes.

## Building Access and Circulation

For reasons of security and control, normal access into the elementary school should be funneled through one entry. The main entry should be clearly defined and have close proximity to the administration area for parents and visitors. Consideration should be given to incorporating an electronically controlled entrance for security.

There are some exceptions:

- The cafeteria and gymnasium are used for staging areas for school bus loading/unloading.




- Pre-Kindergarten and Kindergarten students must have access to a separate drop-off/pick-up area.
- Faculty and staff may be directed to enter through another door close to the staff parking.
- Deliveries should be made to the loading dock entering a corridor (not into kitchen).
- Circulation within the building should be logical and easily learned by students. Guideposts, color schemes or other devices should be incorporated into the design to make it easier for students to navigate around the school.
- Corridors should be at least 10'-0" wide at student circulation areas.
- The design should provide places outside for students who arrive early to congregate and socialize.

## Security

Protecting against vandalism, theft and other crimes is a prime consideration in school design. However, the new school must not appear "fortress-like" or uninviting.

DISD currently uses an alarm system that combines perimeter intrusion alarms and interior motion detectors in key areas. The alarm system should be zoned so that certain zones of the building can remain accessible for after hours activities without disarming the entire school.

The architect should think about building security at all times while designing the facility. Specifically, do not design hidden interior or exterior areas. Similarly, there should not be anyplace for a potential intruder to hide from police or security forces on patrol. Security should be the main consideration when locating exterior lighting.

To retard vandalism, do not specify materials without subjecting them to the "key and spray" test. Test the surface of a material by scratching with a key and applying spray paint. If the material surface is irreparably damaged after being scratched or cannot be successfully cleaned after being painted, then consider other alternate materials.

## Site Planning

General

- Allow for "natural surveillance" from surrounding neighborhood. Do not "hide" parking areas, portable classrooms, entrances, service/delivery areas. Do not create pockets or areas invisible from perimeter.
- Create secure perimeter around site. Create "sub-secure" areas within perimeter such as play fields, parking areas, portables, service/delivery areas.
- Coordinate vehicular driveways (parent/school bus pickup/drop-off zones, visitors, staff, maintenance/delivery trucks, dumpster area, emergency vehicles, ambulance, fire truck/fire lanes, etc.) with secure areas on site. Avoid vehicular/pedestrian intersections.
- Site should not convey image of "correctional facility," yet give feeling of control and security.
- Site /school may not have "front" or "back" sides.

Circulation

- Vehicular and pedestrian circulation routes should have clear lines of vision between each other, and be visible from the school interior and perimeter (surrounding neighborhood).

Lighting

- Provide area lighting of parking areas.
- Provide building lighting (shines from ground to building).
- Provide area lighting at portables.

Fencing

- Provide fencing at secure play fields.
- Provide fencing at parking area.
- Provide fencing at portables.

Video

- Consider providing exterior video monitoring of parking, portable areas, and service/delivery areas.

## Building Exterior

General

- Building form should not create blind spots or niches difficult to see into.
- Pedestrian routes from drop-off or parking areas to building should have clear sight lines.
- Building should not convey image of "correctional facility."

Access Points

- Minimize number of access points into building. Provide all code required exits; avoid ceremonial or unusable entrances.
- "Specialized" access points could occur within secured (fenced) areas.
- Students vs. staff vs. service/delivery vs. specialized access points could be clearly separate and may involve different security/entrance requirements.
- All entrance points should have clear visual area around them (i.e. no hiding spots, large amounts of vegetation, etc.).
- Consider card key/key pad/and other locks at staff, delivery, specialized entrances.

Windows

- Windows should have minimal amount operable (only as required for ventilation/emergency). Operable portions should be high on walls.
- Window placement should allow for visibility to outside for site surveillance or to inside for building surveillance.

Materials

- Provide vandal/graffiti resistant materials.

**Building Interior**

General

- Avoid hidden pockets or areas difficult to see from main corridors.
- Locate administrative area close to main student entrance or high risk areas.
- Provide for clear distinction and control points between public, semi-public, and private areas.
- Areas of schools that are to be used off-hours (PTA, community groups) should be in distinct securable areas.

Monitoring - Metal Detectors

- Consider built-in metal detection devices at student entrances (located away from metal entrances).
- Consider use of X-ray devices at student entrances.

Monitoring - Video

- Consider video monitor hook-up to metal detection devices.
- Video monitoring should be in place at main entrances and general locations throughout school.
- Consider housing and hook-up for future camera locations.
- Central monitoring station in general administrative area. A second monitor could be located in principal's office.
- Coordinate video monitoring with DISD/motion detection system.

Communications

- Provide communication between each instructional area and administrative area.
- Consider providing call out (911) ability from each instructional area.

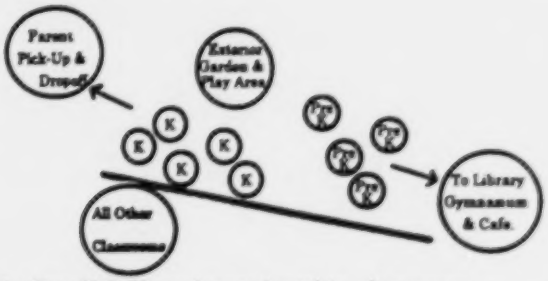
Miscellaneous

- Consider visibility requirements between/into instructional areas.
- Consider open toilet room (no doors, visual privacy, "DFW airport" toilet room concept).
- Provide bright corridor lighting; no "dark spots."
- Use vandal/graffiti resistant interior materials.
- Provide video/communication security device in elevators.

## Functional Relationships

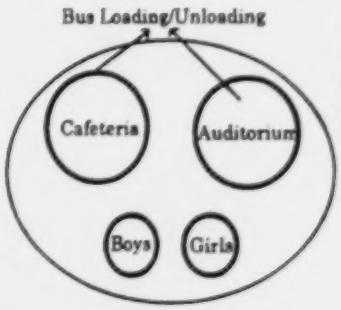
When planning the elementary school the architect should accommodate the following:

Pre-Kindergarten and Kindergarten Areas



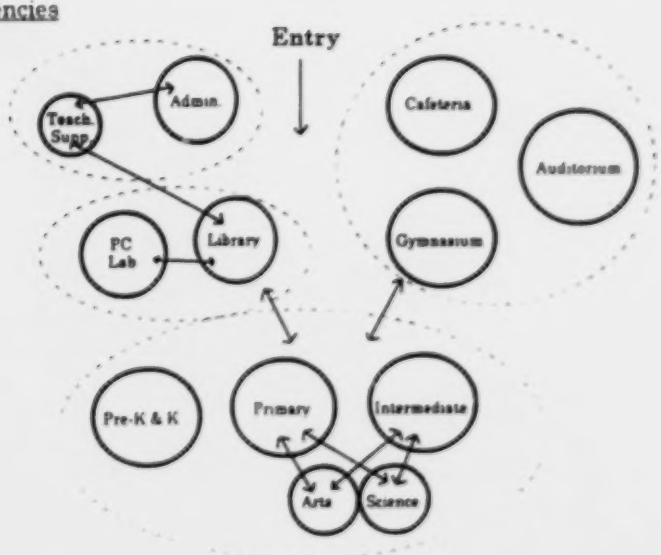

Note: Restrooms for Pre-K & K are located within classroom.

Cafeteria and Auditorium




Locate Adjacent for:
After Hours Access
High Ceiling Height
Noisy Area
Holding Area for
Primary & Intermediate
Bus Loading/Unloading

Key Adjacencies

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### Technology

Facilities developed for DISD should be designed to incorporate available technology as well as accommodate possible future technological advancements in all areas. All rooms should be wired for technology with television cabling connections and electricity.

Similarly, additional air conditioning capacity should be considered to accommodate more heat generating equipment in the future.

Inappropriate applications of technology such as untested uses or overly complex or expensive systems should be avoided.

For ease of maintenance and operations, the number of different types of systems, devices, parts, etc. should be kept to a minimum.

## SPACE REQUIREMENTS

### Explanation of Terms Used in List of Spaces

### Space Requirements

Explanation of Terms Used in List of Spaces

**Type of Space** - is a complete listing (by type) of each different room or space in the school.

**Space Qty.** or **Space Quantity** - is the total number of each different room or space to be provided in the school.

**Recommended Min. S.F.** - is the size of each different room or space necessary to meet DISD requirements.

**Net Area** - is the total size for each type of different room or space, (space quantity x recommended minimum s.f.).

**Remarks** - contains any appropriate notations relevant to a space.

**Total Net S.F.** - is the total net square footage of all of the different types of rooms or spaces.

**Circulation/Core** - includes the following:

- Central plant
- Mechanical rooms
- Electrical rooms
- Telephone equipment rooms
- Custodial closets
- Student restrooms
- Pre-Kindergarten and Kindergarten toilets
- Special populations toilets
- Corridors
- Walls - Interior & Exterior
- Loading dock
- Building Storage Rooms
- Book Storage Room

**Total School Gross Square Footage** shall be the total square feet of the school including exterior walls.

**Grossing Factor** - is the quotient of total gross s.f. divided by total net s.f.

## List of Required Spaces

| Programmatic Space | SF (TEA) | SF (DISD) | # Rooms | SF Total | # Pupils | Pupils per Room | Remarks |
|---|---|---|---|---|---|---|---|
| **Instructional Areas** | | | | | | | |
| **Early Childhood** | | | | | | | |
| PK | 800 | 900 | 2 | 1,800 | 44 | 22 | Note 1 |
| K | 800 | 900 | 5 | 4,500 | 110 | 22 | Note 1 |
| **Primary** | | | | | | | |
| First | 800 | 900 | 5 | 4,500 | 110 | 22 | Note 1 |
| Second | 700 | 800 | 5 | 4,000 | 110 | 22 | |
| Third | 700 | 800 | 5 | 4,000 | 110 | 22 | |
| **Intermediate** | | | | | | | |
| Fourth | 700 | 800 | 5 | 4,000 | 110 | 22 | |
| Fifth | 700 | 800 | 4 | 3,200 | 108 | 27 | |
| Sixth | 700 | 800 | 4 | 3,200 | 108 | 27 | |
| Total | | | 35 | 29,200 | 810 | | |
| **Special Programs** | | | | | | | |
| Speech | | 400 | 1 | 400 | | | |
| Special Population | | 800 | 1 | 800 | | | |
| Special Population | | 800 | 1 | 800 | | | |
| Music | | 900 | 1 | 900 | | | |
| Science | | 900 | 1 | 900 | | | |
| Art | | 800 | 1 | 800 | | | |
| Computer Lab | 900 | 900 | 1 | 900 | | | |
| Total | | | 7 | 5,500 | | | |
| **Physical Education** | | | | | | | |
| Gym | 3,000 | 3,000 | 1 | 3,000 | | | |
| PE Office | | 100 | 1 | 100 | | | |
| Equip Storage | | 100 | 1 | 100 | | | |
| Total | | | 3 | 3,200 | | | |
| **Subtotal Instruction** | | | **45** | **37,900** | **810** | | |
| **Common Areas** | | | | | | | |
| **Library-Media Center** | | | | | | | |
| Library | 2,400 | 2,400 | 1 | 2,400 | | | |
| Librarian's Office | | 100 | 1 | 100 | | | |
| Librarian/Teacher Wrk. Rm. | | 200 | 1 | 200 | | | |
| A/V Storage | | 500 | 1 | 500 | | | |
| Library Storage | | 100 | 1 | 100 | | | |
| **Cafeteria** | | | | | | | |
| Dining Area | | | 1 | 3,000 | 300 | | |
| Storage | | | 1 | 100 | | | |
| **Auditorium** | | | | | | | |
| Seating area | | 3,000 | 1 | 4,000 | 400 | | |
| Stage | | 500 | 1 | 500 | | | |
| Stage Storage | | 100 | 1 | 100 | | | |
| **Subtotal Common Area** | | | **10** | **11,000** | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Support Areas** | | | | | | | |
| **Kitchen** | | | | | | | |
| Food Preparation | | | 1 | 1,200 | n/a | | |
| Servery | | | 1 | 300 | n/a | | |
| Warewashing | | | 1 | 600 | n/a | | |
| Food Storage | | | 1 | 600 | n/a | | |
| Office/Lockers/Toilets | | | 1 | 300 | n/a | | |
| **Teacher's Center** | | | | | | | |
| Planning/Work Room | | | 1 | 400 | n/a | | |
| Staff Restrooms | | | 2 | 400 | n/a | | |
| Text Book Storage | | | 2 to 4 | 400 | n/a | | |
| **Administration** | | | | | | | |
| Reception | | | 1 | 400 | | | |
| Secretary | | | 1 | 80 | | | |
| Principal | | | 1 | 200 | | | |
| Asst. Principal | | | 1 | 150 | | | |
| Conference | | | 1 | 150 | | | |
| Counselor | | | 1 | 150 | | | |
| Clinic | | | 1 | 300 | | | |
| Work Room/Copier | | | 1 | 150 | | | |
| Storage | | | 1 | 50 | | | |
| Records Vault | | | 1 | 100 | | | |
| Staff Restrooms | | | 2 | 200 | | | |
| **Subtotal Support** | | | **22** | **6,130** | | | |
| **Subtotal Programmatic Areas (NET)** | | | | **55,030** | | | |
| **Core Areas** | | | | | | | |
| Student Restrooms | | | | | | | |
| Custodial | | | | | | | |
| Central Plant | | | | | | | |
| Circulation | | | | | | | |
| **Core at 25% of NET** | | | | **13,758** | | | |
| **Total Area** | | | | **68,788** | | | |
| **Exterior Areas** | | | | | | | |
| Playground | | | | | | | |
| Hard Surface Play Area | | | | | | | |
| Queing and Drop-off / Pick-up for school busses and cars | | | | | | | |
| Staff Parking | | | | | | | |
| Visitor Parking | | | | | | | |
| Pre-Kindergarten & Kindergarten Play Area | | | | | | | |
| Future "Portable" Layout Area | | | | | | | |
| Note 1: Required individual toilets for classrooms is included in the square footage. | | | | | | | |

### Anticipated Staffing of School

The following anticipated staffing is based on current DISD staffing policies. The following table is based on the assumption of one teacher per classroom.

| Instructional | Quantity |
|---|---|
| Pre-Kindergarten teachers | 2 |
| Kindergarten teachers | 5 |
| Primary teachers | 15 |
| Intermediate teachers | 13 |
| Duty Free Teacher and Aide | 2 |
| Bilingual Aides | 3 |
| Speech Therapist | 1 |
| Programmatic Remedies Teacher and Aide | 2 |
| Special populations teachers and Aides | 3 |
| Other faculty and staff: | |
| Media Specialist | 1 |
| Cafeteria Staff | 12 |
| Nurse and Aide | 2 |
| Counselor | 1 |
| Principal | 1 |
| Assistant Principal | 1 |
| Receptionist/Secretary | 1 |
| Clerks | 1 |
| Custodians | 5 |
| Total Faculty and Staff | 71 |

Aides (Teachers) - Classroom area. Special populations.

## General Requirements

### Standard Utilities

As buildings become more sophisticated, a need for flexibility will be required in the utility systems provided. The requirement of flexibility means that all utilities must be considered as the school anticipates a future in which change is constant.

When walls change, the internal communication system must change with them; the HVAC system must react and the alarm system must continue to function. As demands change (i.e., for increased computer usage) the utilities must be able to meet the demand without compromising the program. One of the major challenges will be to provide sufficient utilities, with the needed flexibility, without driving costs up. Success in this area will lead to a building that is usable well into the future.

The following utility requirements are standard for many areas of the school.

### Electrical Outlets

Use standard duplex electrical outlets (120 volt a.c.). Provide at least one outlet every 8'-0" on center along all walls in all classrooms and laboratory spaces (a minimum of 4 per wall). Provide a minimum of one outlet on each wall and one outlet on each wall length of 24" or greater which is separated by an opening or other obstruction. Provide safety covers on outlets for all classrooms to be utilized by Pre-Kindergarten and Kindergarten students. Provide outlets within 36" of all proposed TV locations. All other rooms should have electrical outlets spaced in accordance with the Electrical Guidelines in the DISD Design Standards Manual.

### Light Switches

Dual switches are required for each classroom, laboratory, and library. Provide circuit(s) to allow a single fixture or group of fixtures to remain on for low level lighting requirements such as naps (Pre-Kindergarten), note taking, during films, etc. All other rooms should have switches as required to comply with the Electrical Guidelines in the DISD Design Standards Manual and in accordance with ADA requirements. Provide key operated switches for restrooms, hallways, and gymnasiums.

Architect shall consider passive infrared sensor switches.

### Light Fixtures

2x4 low glare fluorescent fixtures for each classroom, laboratory, and library. All other rooms should have standard 2x4 fluorescent light fixtures and other fixtures as required to comply with the Electrical Guidelines in the DISD Design Standards Manual. Provide with hinged, swing down lens.

### Television

A coaxial cable system should be distributed to all classrooms, laboratories, library, gymnasium, and auditorium. System should have access to cable network programming and allow fixture hook-up of an earth satellite antenna. Provide antenna outlet within 36" of all proposed television locations.

### Computer Network

Design for the option of classroom to media center link as well as electronic network hook-up.

Telephone

Outside telephone lines must be available to the school; and at some future time these lines will be distributed to or be accessible from each office, as well as the teacher conference room and the library. Provide conduit with pull wires necessary to provide this flexibility. The ability to make general announcements should be built into the Public Access System and internal telephone systems should also be provided so that teachers can contact the office and the office may contact rooms without disrupting the entire school. Pay phones should be located near the building entrance and the cafeteria. Library, science room and computer laboratory must have a dedicated line for use of a modem.

Clocks

A clock and bell system for class changes should be included as part of the internal communication system. A bell system is necessary for fire alarms for an elementary school.

Security

An appropriate security system is required to detect unauthorized break-ins, to sound alarms in the building, and in police communication systems as allowed by code. Since the building is to be used after school by community groups (i.e., after school program), it will be necessary to zone this system to close off portions of the building while leaving others available. The architect should consult with DISD to determine the security system appropriate for the design. Security screens should be considered for library and computer lab windows.

Gas

Will be used to fuel the building HVAC system and for cooking. There should be no reason to bring gas into any of the classrooms.

Heating, Ventilation and Air Conditioning (HVAC)

Within the limits of the budget, each classroom and laboratory should have individual control of the HVAC system. Design of the ventilation system should meet current ASHRAE recommendations.

Standard Finishes

The following finishes are standard for many areas of the school. Refer to "Individual Space Requirements" in this volume for finishes which are not standard and for other requirements.

Ceilings

2 x 2 acoustic lay-in
Painted water resistant gypsum board in kitchen and restrooms.

Walls

Consider vinyl covered (tackable) in classroom and major corridors.

Floors

Carpeted, direct glue-down. Provide resilient tile flooring in corridor, at sinks, drinking fountains, and wet areas and in the fine arts classroom. Restrooms, kitchen, and servery will have ceramic/quarry tile floors. Gymnasiums will have wood floors.

Windows

Provide a means to control light levels with room darkening drapes or blinds in all classrooms, laboratories and the library. Verify where windows are operable and non-operable. Provide for appropriate security at windows (bars, security screens, etc.).

Standard Fixed Equipment and Storage

The following fixed equipment and storage standards apply to many areas of the school. Refer to "Individual Space Requirements" in this volume for equipment and storage which are not standard.

Chalkboard

Whiteboard: "Repeat" wall mounted, 12' long minimum. Provide with continuous tack strip in all classrooms and labs. Provide map hooks.

Tackboard

Wall mounted, 12' long minimum in addition to any tack strip provided above the chalkboard.

Teacher Storage (in room)

Stain grade hardwood finishes, lockable cabinet with adjustable shelves for materials and supplies.

Student Storage (in classroom)

Stain grade hardwood finished "cubby holes" for supplies, books, and projects. Provide a minimum of 2 cubic feet per student. Provide metal coat hooks for student coats.

General Storage (in classroom)

Stain grade hardwood finished open and closed storage space with adjustable shelves for materials and supplies. Provide a minimum of 12 linear feet of base cabinet storage and 12 linear feet of closed wall cabinet storage and 12 linear feet of open wall cabinet storage in each classroom. Provide a minimum of 24 linear feet of base cabinet storage and 24 linear feet of closed wall cabinet storage and 24 linear feet of open wall cabinet storage in each lab.

Counter Space (in classroom)

Plastic laminate finish. Provide a minimum of 12 linear feet of uninterrupted plastic laminate counter space within each student's reach in each classroom.

Projection Screen

Provide a ceiling mounted projection screen with keystone brackets in each classroom, laboratory, library, cafeteria dining area, and over front part of stage in auditorium.

Fire Extinguishers

Provide fire extinguishers in recessed cabinets in corridors in accordance with City of Dallas codes. Provide wall mounted units where required in classroom.

Lockers

Provide student lockers as directed.

Tack Strips

Locate special tack strips or provide tackable walls as required in corridors.

## INDIVIDUAL SPACE REQUIREMENTS

### Instructional Pre-Kindergarten Classroom

Description:

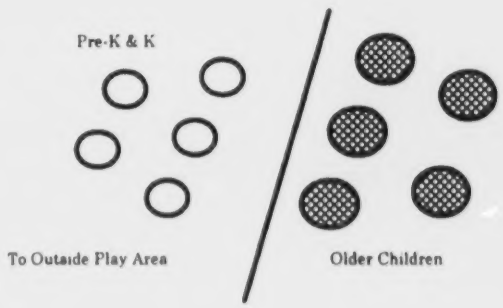
- Pre-Kindergarten classrooms will accommodate 4 year olds for morning and afternoon half-day classes. Each room will accommodate all of the class activities. The room will be made up of "Learning Centers" which consists of: focused exploration, socialization, small group and individual play, gross motor skill activity, dramatic play and talk/share/listen/sing activities.

Anticipated Occupancy:

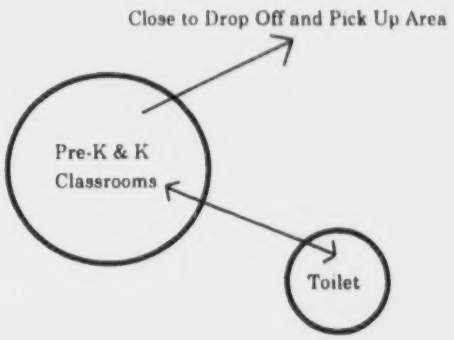
22 students
1 teacher
1 aide

Functional Relationships:

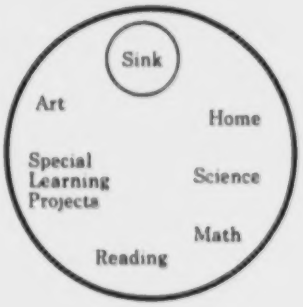
- Locate these rooms in a section of the building reserved for small children with immediate access to a protected outside play area.
- The Pre-Kindergarten and Kindergarten area should have a separate parent drop-off/pick-up area.




- Locate a toilet room adjacent to and with the door opening into the room. The door to the toilet should be visible from all areas of the classroom. Pre-Kindergarten and Kindergarten may be located together, but avoid "walk-through" toilet.



- The layout of the Pre-Kindergarten classroom must be changeable and will contain the following areas:




Special Utilities:

- Locate a sink between the Home Center and the Art Center; provide a gooseneck faucet with hot and cold water; also provide bubbler drinking fountain fitting at the sink.

Special Finishes:

- Provide an area of vinyl flooring for the Art Center, the Home Center, and their common wet area and carpet in class area.

Other Requirements:

- Pre-Kindergarten and Kindergarten rooms can be interchanged.
- All furniture, fixtures, cabinets, etc., should be scaled in proportion to children. Provide storage of manipulatives, games, books, and supplies.
- Provide access to exterior views.
- This room must have direct access to an exterior garden for planting and outdoor projects. Contain the area with a secure method or other suitable means. Exterior accessible tool storage should also be provided. This garden area is shared with the Kindergarten classrooms.
- Seating should accommodate all of the students in a full group, on floor mats (for naps, etc.), or in smaller groups in different Centers.
- The classroom furniture should consist of tables and chairs to allow for flexibility of instruction in the Learning Centers. Tables should be of different sizes and shapes to allow for different configurations.
- The teacher will need a desk, chair, and a filing cabinet.
- Wall space should be used to maximize tack space and writing surface at student height.
- Provide counter space for student project display.
- Provide enclosed space (with glass viewing panels) near classroom to be a "holding zone" of students waiting for parent or bus pick-up.
- Windows with window darkening drapes or blinds are required.
- Snacks will be provided in this room.
- Refer to the General Requirements section for additional information.

## Instructional Kindergarten Classroom

Description:

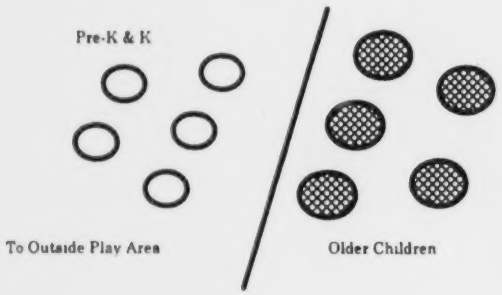
- Kindergarten classrooms will accommodate students for full day classes. Each classroom will be made up of "Learning Centers." This room will accommodate all of the class activity which consists of:
  - focused exploration
  - socialization
  - small group and individual play
  - gross motor skill activity
  - dramatic play
  - talk/share/listen/sing activities

Anticipated Occupancy:

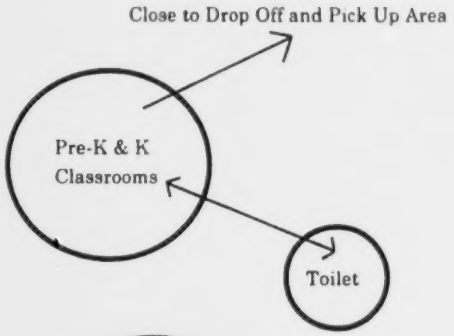
22 students
1 teacher

Functional Relationships:

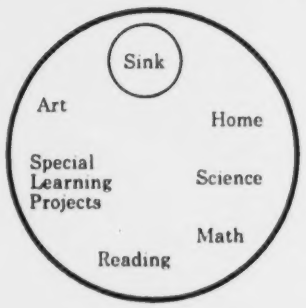
- Locate these rooms in a section of the building reserved for small children with immediate access to an outside protected play area.




- Locate a toilet room adjacent with the door opening into the room. The door to the toilet should be visible from all areas of the classroom. Pre-Kindergarten and Kindergarten may be located together, but avoid a "walk-through" toilet. The Pre-Kindergarten and Kindergarten area should have a separate drop-off/pick-up area.




- The layout of the Kindergarten classroom must be changeable and will contain the following areas:



Special Utilities:

- Locate a sink between the home center and the art center; provide a gooseneck faucet with hot and cold water with vacuum breaker; also provide a drinking fountain fitting at the sink.

Special Finishes:

- Provide an area of vinyl tile flooring for the art center, the home center, and their common wet area and carpet in class area.

Other Requirements:

- Pre-Kindergarten and Kindergarten classrooms can be interchanged.
- All furniture, fixtures, cabinets, etc., should be scaled in proportion to children. Provide storage for manipulatives, games, books, and supplies.
- Provide access to exterior views.
- This room must have direct access to an exterior garden for planting and outdoor projects. Contain the area within a chain link fence or other suitable means. Exterior accessible tool storage should also be provided. This garden area is shared with the Pre-Kindergarten classrooms.
- Seating should accommodate all of the students in a full group, on floor mats (for naps, etc.), or in smaller groups in different Centers.
- The classroom furniture should consist of tables and chairs to allow for flexibility of instruction in the Learning Centers. Tables should be of different sizes and shapes to allow for different configurations.
- The teacher will require a flexible desk position in the room.
- Wall space should be used to maximize tack space and writing surface at student height.
- Provide counter space for student project display.
- Provide enclosed space (with glass viewing panels) near the classroom to be a "holding zone" of students for parent or bus pick-up.
- Windows with window darkening drapes or blinds are required.

## Instructional Primary (1st through 3rd Grade) Classroom

Description:

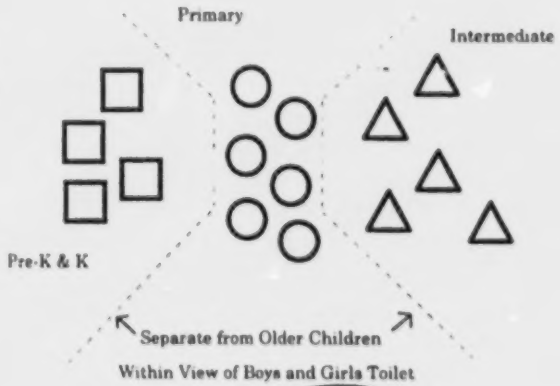
- The primary classroom is a flexible learning environment that will facilitate exploration, socialization, introduction to reading, writing, arithmetic, and science, story telling and discussion along with individual and small group activity. It will be organized around the "Learning Center" concept.

Anticipated Occupancy:

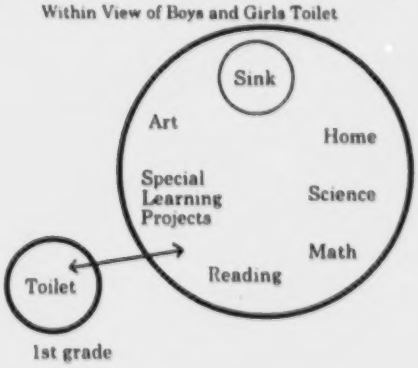
22 students
1 teacher

Functional Relationships:

- Locate all primary classrooms together in a "quiet" part of the school and within close proximity of the boys and girls restrooms.




- Locate a toilet room adjacent to the 1st grade classroom with the door opening into the room. The door to the toilet should be visible from all areas of the classroom.




Special Utilities:

- Wet area will have a single compartment sink with a gooseneck faucet with vacuum breaker with cold water.

Special Finishes:

- Provide an area of vinyl tile flooring for the art center, home center, and their common wet area and carpet in class area.

Other Requirements:

- Room must have views to the outside.
- In addition to the learning centers, provide moveable tables and chairs for 22 students along with adequate open floor space for story telling.
- Provide the maximum amount of wall and counter display space for student projects and instructional aids at the right height for 5-8 year old children.
- Allow space for moveable items such as easels in the art center, etc.
- Refer to the General Requirements section for additional information.

**Instructional Intermediate (4th, 5th, and 6th Grade) Classroom**

Description:

- Activities for these rooms include: academic orientation with activity focus, exploration, individual work with guidance (video, computers, books), communication, arts, writing, math and social studies projects. In addition, there is some whole class discussion and demonstration.

Quantity:

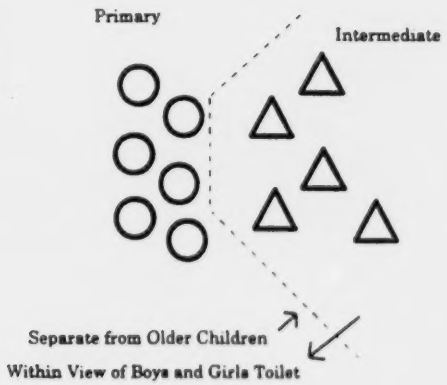
- Refer to "List of Required Spaces."

Anticipated Occupancy:

22 students (3rd and 4th grades only)
27 students (5th and 6th grades only)
1 teacher for each classroom

Functional Relationships:

- Locate all intermediate classrooms together in a "quiet" part of the school within close proximity of the boys' and girls' restrooms.




Other Requirements:

- Room must have view to the outside.
- The intermediate classrooms may contain Learning Centers.
- The intermediate classrooms do not contain a special projects area or an art area.
- Refer to the General Requirements section for additional information.

## Instructional Science Classroom

Description:

- A dedicated elementary science laboratory should develop scientific skill and thought. Experiences in a laboratory setting should emphasize guided inquiry, inquiry, exploration, skill development, and process development activities that align with real-life situations. Students will work in cooperative groups (of three or four) with hands-on, minds-on activities at laboratory stations. Activities may require students to remain at a laboratory station or to move about freely in order to make use of laboratory space, equipment, and materials.

Quantity and Size:

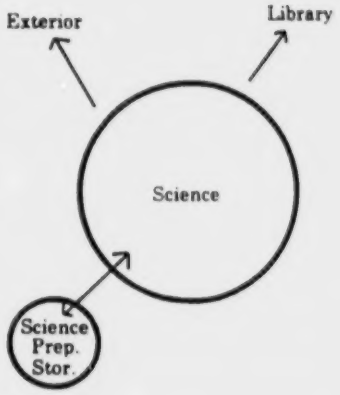
- Refer to "List of Required Spaces."

Anticipated Occupancy:

22-27 students (3rd through 6th grades)
1 teacher for each grade

Functional Relationships:

- Computer work station should not be near water sources.
- Computer work station should be adjacent to cable access and a phone line.
- Locking storage for the VCR and laser disc player should be near the TV wall mount.
- Teacher demo needs to be movable.
- Plant station should be near windows.
- Aquarium should be away from windows.
- Student work stations need sinks.
- Height of counter tops appropriate for student work stations.




Special Finishes:

- Floor should be resilient tile.

Special Utilities:

- One sink with vacuum breaker with cold and hot (instantaneous source) water is required in this room. Provide electrical outlets with G.F.I. near sink for equipment (aquariums, etc.). Provide electrical outlets with safety covers along perimeter walls (120 v. A.C. electrical outlets every 4 feet).

Other Requirements:

- This room takes the place of a science laboratory and the furniture and finishes should be appropriate for this use. In addition, the table tops should be of a "lap top" surface. A large open area is required for large projects.
- Provide lockable storage for learning materials.
- Seating should consist of different size tables and chairs for flexibility in classroom use.
- Provide bookshelves, open shelf storage, and tote tray storage.
- Windows with window darkening drapes or blinds are required for audio/visual use.
- Refer to the General Requirements section for additional information.

### Science Lab Storage/Preparation

Description:

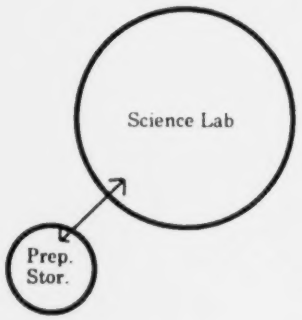
- This room is used for storage and teacher preparation related to the science laboratory.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate this room adjacent to the science laboratory classroom.
- Refrigerator needs to be in teacher prep area.




Special Finishes:

- Floor should be resilient tile.

Special Utilities:

- One sink with cold and hot (instantaneous source) water is required in this room; provide electrical outlets with G.F.I. near sink for equipment (aquariums, etc.)

Other Requirements:

- Provide lockable storage for learning materials.
- Refer to the General Requirements section for additional information.

## Instructional Fine Arts Classroom

Description:

- This room is designed to accommodate an art educational program. All students in grades 3-6 will use this room.
- Activities for art in this room include art instruction and practice in painting, crafts, clay sculpture, and other art related activities.

Quantity and Size:

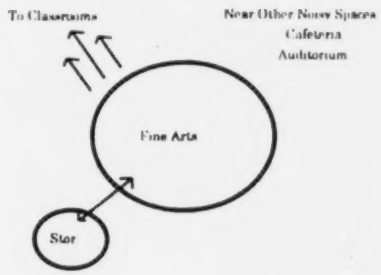
- Refer to "List of Required Spaces."

Anticipated Occupancy:

22-27 students
1 teacher

Functional Relationships:

- Locate this room centrally, near the other "noisy" spaces. Locate a storage room adjacent to the fine arts room.




Special Finishes:

- Floor is resilient tile.

Special Utilities:

- For art instruction, provide a built-in sink with paint/plaster traps (hot and cold water). Provide 120 v A.C. electrical outlets every 8 feet.

Other Requirements:

- Exterior views are essential for art instruction; provide operable windows with room darkening shades.
- For art instruction, table tops should be of a washable material such as plastic laminate.
- Provide "low" storage consisting of large drawers or trays for students projects "in-progress" and to contain supplies for each table or group.
- Provide space for "rack" paper holders, material storage and flat storage (5' x 3' drawers) for student work.
- Provide extra pin-up/display space for projects inside classroom.
- Provide 3' deep x 5' wide (min.) countertops for laying out artwork and large papers.
- Provide a display case in the wall of the corridor. Access can be from the classroom or from the corridor side. Provide adjustable shelves and sliding doors.
- Refer to the General Requirements section for additional information.

## Instructional Fine Arts Classroom Storage

Description:

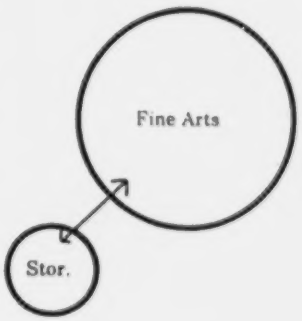
- This area will be used for general storage of art materials and supplies for teacher to prepare projects and demonstrations.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate this room adjacent to the fine arts classroom.




Special Finishes:

- Floor should be resilient tile. Provide proper fire protection of surrounding surfaces near kiln, e.g. ceramic tile floor at wall areas and wet areas.

Special Utilities:

- At kiln, provide proper hood per code venting. Kiln requires 240 v A.C. electrical outlet. Provide built in sink with paint/plaster traps (cold water). Provide smoke detector as required.

Other Requirements:

- Storage to accommodate learning materials, etc., and needs to include some locked storage.
- Provide flat files, supply cabinets and open shelving.
- Provide counter space for teacher preparation of projects and a "rated" locked flammable storage cabinet for materials and teaching supplies.
- Provide a wall mounted fire extinguisher.
- Refer to the General Requirements section for additional information.

## Music Classroom

Description:

- This room is designed to accommodate a music educational program. All students in grades 3-6 will use this room.
- Activities for music in this room include singing, playing basic rhythm instruments, reading music, creating music, and listening to music. This room will also be used for teaching instrumental music, if it is part of the program, and for band and/or choral practices.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

22-27 students
1 teacher

Functional Relationships:

- Locate this room centrally, near the other "noisy" spaces.
- This room can be used as a "green room" or preparation area for performances if located adjacent to the stage.

Special Finishes:

- For music instruction, acoustics and sound attenuation are critical factors. The room will require acoustical treatment for walls and ceiling. Floor is carpet.

Special Utilities:

- Provide 120 v A.C. electrical outlets every 8 feet.

Other Requirements:

- If practical, consider non-parallel walls to improve room acoustics.
- Provide sound-proof doors and design walls to reduce sound transmission to other spaces.
- For music instruction, the furniture is to consist of stacking chairs, music stands, teacher desk, chair, and file cabinet.

## Instructional Computer Laboratory

Description:

- The Computer Lab will accommodate up to 29 students at carrels in a classroom. The perimeter of the room is reserved for printer locations. This room will be used for instruction in the use of computers and as a project and research space for students.

Quantity and Size:

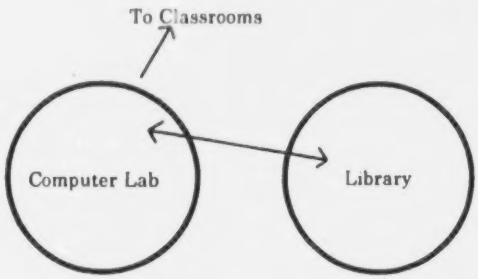
- Refer to "List of Required Spaces."

Anticipated Occupancy:

22-29 students
1 teacher

Functional Relationships:

- This room should be located near the Library to accommodate library/computer lab interaction activities. This room should be interior to the building for security and lighting problems associated with computer use.




Special Finishes:

- Walls should be sound absorbing material. Provide carpeted floor.

Special Utilities:

- Practical and flexible design for cable distribution is required. Provide security system for this room. Provide 120 v. A.C. electrical outlets near all equipment. Provide circuit breakers and surge protectors to protect equipment.

Other Requirements:

- Provide controlled access.
- Provide 30 workstations or carrels and a station for the teacher connected to each micro computer. Each carrel should provide space for note taking. The printers should be connected through the control micro computer.
- Provide humidity control.
- Provide sound attenuation for printers.
- Windows are not required.
- Refer to the General Requirements section for additional information.

**Speech Classroom**

Description:

- This room will provide desk space to one staff person, a lockable closet for student records, and space for individual and group instruction of up to six students at one table.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate this room near the administrative area adjacent to the counselor's office.

Special Finishes:

- Floor should be part carpet, (for individual student play therapy on the floor) and the remainder should be vinyl ceramic tile.

Other Requirements:

- Provide a minimum of 8 s.f. of mirror on one wall mounted at seated student height.

## Gymnasium

Description:

- The space will be a gymnasium type of activity space. This area would accommodate activities such as volleyball, basketball, badminton, gymnastics, aerobics and dance. In addition, this room may be used for after-school activities, special projects, and faculty or community meetings.

Quantity and Size:

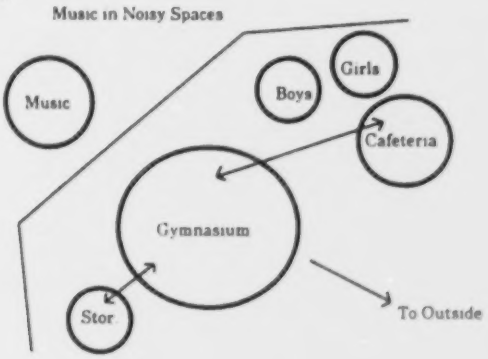
- Refer to "List of Required Spaces."

Anticipated Occupancy:

60 students
2 teachers

Functional Relationships:

- Locate the gymnasium room in a "noisy" part of the school. This room should have easy access to the outdoor paved playing surface and turf playing areas. This room and adjacent restrooms should be accessible for after hours use.
- Consider placing the gymnasium room next to the cafeteria because:
  - Both are noisy.
  - Both have high ceilings.
  - Both have special HVAC requirements.
  - Both need to be near restrooms.
  - Both are used after hours.




Special Finishes:

- This room requires acoustical treatment. Proper acoustics are critical to regulate high-noise level in this activity room. Exposed structure (painted) should be considered because lay-in type tile is easily damaged. The floor will be wood.

Special Utilities:

- The room will contain air conditioning (in some circumstances), ventilation, and heating as required for physical education classes and assemblies. Provide locally controlled air conditioning. This room should be accessible for after hours use without disarming the entire security system. Impact-proof lighting fixtures should also be provided at high ceilings. Provide 120 v. A.C. electrical outlets every 12 feet with stainless steel metal coverplates.
- Drinking fountain and toilet areas should be located adjacent to the gymnasium.

Other Requirements:

- Provide a high ceiling to allow adequate clearance for athletic activities.
- Folding mats are required for aerobics and gymnastics activities.
- To accommodate instructional activity, the room should include bulletin boards, chalkboard, and an audio/visual screen in one area.
- Portable items and furniture systems (benches, stage Public Address system) are needed for special seating, group interaction, and performance purposes.
- Four adjustable and retractable basketball backboards should be installed in 8-10 ft. heights with roll-up cables.
- Windows are not necessary; however, any windows in this room should provide the ability to be darkened for audio/visual use. Provide impact-proof covering.
- Provide impact-proof covering over intercom speaker.
- Provide protective pads and hangers as required.
- Refer to the General Requirements section for additional information.

## Gymnasium Storage

Description:

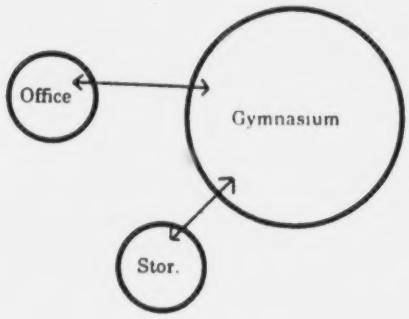
- This storage room will provide desk space for staff as well as storage for Physical Education equipment and furniture. It should be located adjacent to the gymnasium.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate this room adjacent to the gymnasium.




Special Finishes:

- Floor should be resilient tile.

Other Requirements:

- Secured and enclosed storage is required for all physical education equipment.
- Shelving and storage bins are needed for small equipment, records, and instructional supplies.
- Refer to the General Requirements section for additional information.

## Special Populations

Description:

- The various special population classrooms serve students with special needs. The students in special populations need the opportunity to interact with other students in the school, "to see and be seen" and to participate in every possible area.
- These classrooms include Self Contained, Severe and Profound, and Early Childhood Handicapped students.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

- Varies by specific room type.

Functional Relationships:

- Each room should provide for the "least restrictive environment," depending upon the type of classroom.
- Plan for a one-on-one classroom area for children with special problems.
- Provide for carpet in 2/3's of the classroom with tile area at "wet areas."
- Provide changing tables at two heights in handicapped restrooms.
- Provide for wheelchair-accessible sinks in restrooms.
- Provide for wheelchair-accessible shower in restrooms.
- Refer to the General Requirements section for additional information.

## Library/Media Center

Description:

- The library/media center should be thought of as the central element in the design of an elementary school. Conceptually, it is the organizational hub of the school. It does not, however, need to be in the geographic center of the building.
- The library/media center is really a collection of the following spaces and activities:

Main Room:
- Stack area (assume 10 books per student)
- Periodical area
- Seating areas and work tables or carrels near stacks
- Reference area (including card catalog and microfiche readers)
- Technological research area
- Free use computer area
- Story Corner area(s)
- Library instruction area (seat 30 students)
- Circulation desk
- Librarian desk

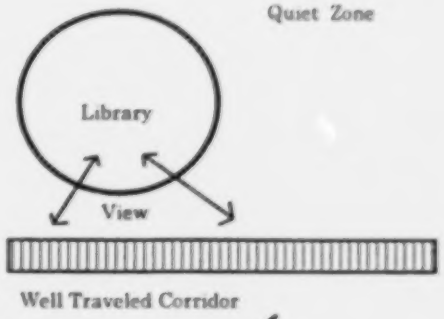
Librarian/Teacher Workroom:
- Audio/Visual Equipment Storage and Preview Room
- Teacher Preview

Quantity and Size:

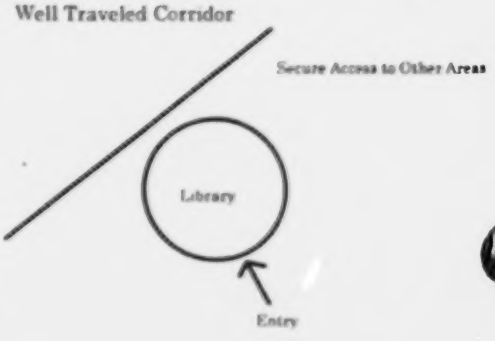
- Refer to "List of Required Spaces."

Functional Relationships:

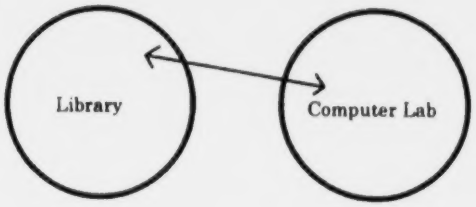
- Locate the library so that it is convenient to the maximum number of students. However, it needs to be in a relatively quiet area of the school.



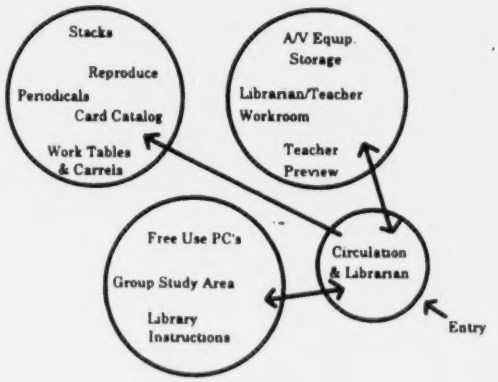

- The library is used after normal school hours by students, faculty and visitors so it should be easily accessible from an entry.



- The library should be close to the computer lab.




- The library is made up of three basic zones:
  - Stack and reference area
  - Study and free use area
  - Faculty work areas and storage
- From the circulation desk the librarian should be able to control the main room as well as monitor who is entering or leaving the library.




Special Finishes:

- Use sound absorbing finishes and upholstered seating to help establish a quiet environment.

Special Utilities:

- Provide one electrical outlet for each worktable or study carrel. Provide one outside telephone line to the computer area for modem use.
- The library/media center will be the computer technology center for the school.
- The card catalog area needs electrical outlets for electrical catalogue equipment (microfiche, terminals, etc.).
- Plan for three computers and one printer in the computer area and one computer at the librarian's desk.

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Other Requirements:

- Use furniture that is easy to re-arrange. Design the layout the library so that the furniture can be re-arranged for this size group, for smaller groups, or for individuals.
- The library instruction area is used to teach students about the library. Audio/Visual equipment is used regularly and the control of lights and the ability to darken the windows is especially important in this area. Provide a ceiling mounted projection screen.
- Provide built-in display space visible from the outside of the library and also some near the circulation desk to display books and student projects.
- The circulation desk and librarian desk should accommodate one librarian and one aide.
- The circulation desk will have a computer and a bar code reader system for checking out books.
- The story corner area with seating area needs comfortable seating for small groups.
- Provide a research area for technological research tools - computers with modem, such as electronic bulletin boards, etc., near the circulation desk.
- Provide a reference area, including card catalog, microfiche readers, reference books, encyclopedias, etc. This area should be located near the stack area.
- Scale furniture and stacks appropriately for student usage.
- Refer to the General Requirements section for additional information.

**Library/Media Center - Librarian/Teacher Workroom**

Description:

- This room will accommodate copier equipment, computers and other equipment to be used by the librarian, teachers, colored paper, paper racks, and laminators.

Quantity and Size:

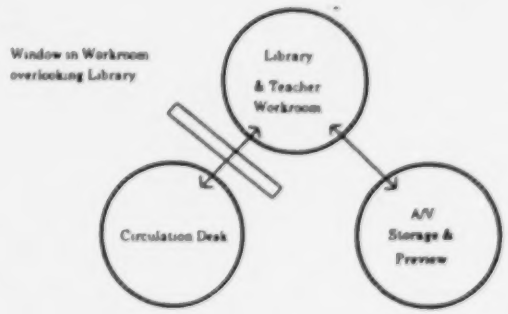
- Refer to "List of Required Spaces."

Anticipated Occupancy:

1 librarian
2 teachers

Functional Relationships:

- This room should adjoin the library and be in close proximity to the librarian's desk.




Special Finishes:

- Floor is resilient tile.

Special Utilities:

- Provide proper ventilation and air conditioning for accommodating use of duplicating equipment and laminators. Provide sink at work counter with hot and cold water. Provide electrical outlets for equipment (120 v. A.C.). Provide locally controlled air conditioning. Provide an outside telephone line in the workroom.

Other Requirements:

- This room is to be used for preparation of new books and periodicals. A built-in counter with sink should be provided in this area. Lockable overhead storage and bottom cabinets are also required.
- Provide door with classroom function lock.
- Provide built-in counter space for two (2) computers and printer placement.
- Provide vision glass panel into Library.
- Provide flat files, built-in.
- No exterior windows are required.
- Refer to the General Requirements section for additional information.



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## Library/Media Center - Audio/Visual Storage and Preview Room

Description:

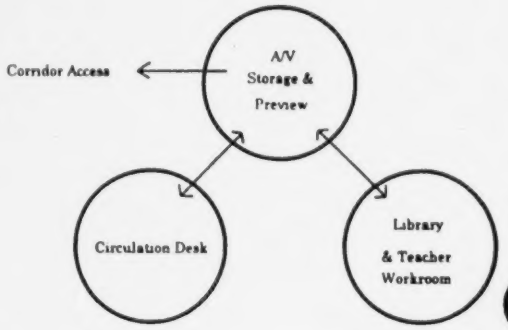
- This room is lockable and is used to store audio/visual and computer equipment when it is not checked out to teachers or students. It also contains an area for teachers to preview audio/visual materials and software.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate this room close to the circulation desk for ease in checking items in and out and near the corridor so that equipment does not need to be moved across the entire library space.




Special Utilities:

- Provide 120 v. A.C. in convenient locations for previewing audio/visual materials and software.
- Limit humidity to 40% RH.

Other Requirements:

- There are no windows in this room. Provide a classroom function lock on the door.
- Provide shelving for equipment, materials, and audio/visual carts.
- Provide a preview area with a counter or table for equipment, a projection screen, and two chairs.
- Provide ramps wherever equipment must be moved up or down for changes in the level throughout the school.
- Refer to the General Requirements section for additional information.

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## Cafeteria Dining Space

Description:

- Provide a dining space which accommodates approximately 300 students at one interval. The dining space should be flexible for multiple uses, i.e. testing, speakers, community activities, and after school programs.

Quantity and Size:

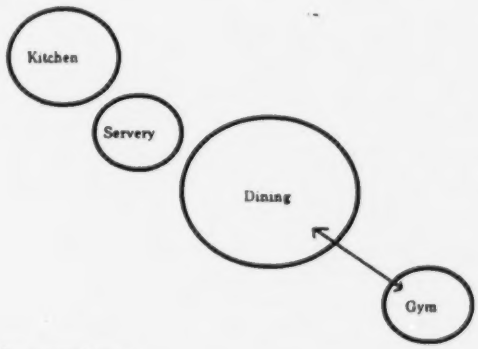
- Refer to "List of Required Spaces."

Anticipated Occupancy:

300 students for dining (assume 10 s.f. per student)

Functional Relationships:

- Locate adjacent to the kitchen/servery and near the gymnasium.
- Locate as far away from the classrooms as possible.




- Cafeteria can be set up for student dining or for meetings.

Special Finishes:

- Easy maintenance flooring (resilient tile or terrazzo) is desirable. Seats must be easy to clean. Acoustical treatment of walls and ceiling for noise reduction is required. Colors in dining area should be cheerful, but calming.

Special Utilities:

- Provide duplex electrical outlets every 12 feet (120 v. A.C.). Provide locally controlled air conditioning.
- Provide 2 refrigerated drinking fountains (at appropriate heights).

Other Requirements:

- Provide an inviting balance of natural and artificial light.
- Provide a variety of small, round and rectangular tables that seat 4-6 students and individual chairs.
- Provide display cases for projects and student work in corridor outside entry.
- Windows need room darkening drapes or blinds for audio/visual use.
- Refer to the General Requirements section for additional information.

**Cafeteria Kitchen - Storage**

Description:

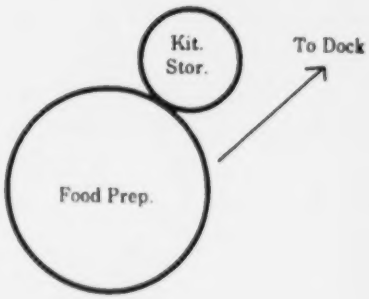
- Kitchen storage areas include space for freezers, coolers, pantry storage, extra utensil storage, paper products, and plastic products storage.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate between the food preparation area and the loading dock.




Special Finishes:

- Coolers and freezers are Pre-fabricated.
- Quarry tile floors.

Special Utilities:

- As required by coolers and freezers.

Other Requirements:

- Shelving system should be a combination of open rack metal shelving and solid metal shelving.
- Extra high ceiling should be maintained to maximize storage capacity.
- Design must be reviewed by DISD Food and Child Nutrition Service Department and meet City Health code.
- No exposed pipes, conduits, or ducts.
- "Rodent proof" construction.
- Special keying per DISD standards.
- Refer to the General Requirements section for additional information.

**Cafeteria Kitchen - Food Preparation**

Description:

- Kitchen area provides space for DISD food preparation requirements and basic food service equipment.

Quantity and Size:

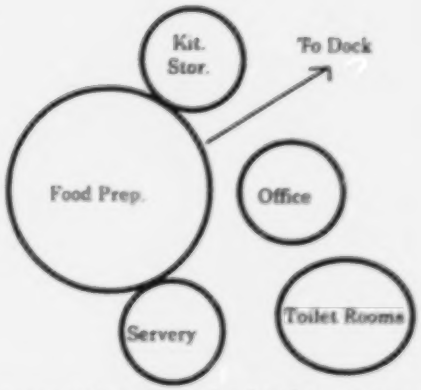
- Refer to "List of Required Spaces."

Anticipated Occupancy:

6 persons

Functional Relationships:

- The food preparation area within the kitchen adjoins the servery. Kitchen storage should be adjacent.




- Locate a small kitchen office between the food preparation area, the kitchen storage area and the loading dock.

Special Finishes:

- Special consideration is needed in the selection of floor material for durability and ease of maintenance. Quarry tile is recommended for maintenance and wearing problems. Walls and ceilings must be light colored and washable per health code (ceramic tile walls).

Special Utilities:

- Gas fired equipment is preferred. Separate circuits should be made for major equipment that requires electrical service. Hoods should be mechanically designed to blow across rather than downward with fire suppression system. Provide separate toilet rooms/locker rooms for male and female workers.

Other Requirements:

- Conform to City Health codes.
- Central plant facility should contain separate boiler (with booster-heater) to accommodate health code requirements for water temperature control and required quantities.
- An ample amount of natural light should be provided in the kitchen area.
- A separate custodial closet should be located within the kitchen area in a separate room for easy accessibility.
- Dishwashing units and food preparation tables and equipment should be constructed of stainless steel and should be free-standing.
- Utensil storage should be provided by ceiling mounted racks or on shelves located below free-standing stainless steel preparation units.
- The tray return area is to contain receptacles for paper and light plastic trash items. The tray return system is designed for metal and molded plastic items. Tray storage rack is located near dishwashing unit along with tray carrier (moveable).
- Toilet room should contain eight stainless steel lockers (for maximum durability).
- Design must be reviewed by DISD Food and Child Nutrition Service Department and the City Health Department.
- Provide space in kitchen office for a small safe.
- Refer to the General Requirements section for additional information.

## Cafeteria Servery

Description:

- Breakfast and lunch meals are served. Students move along a line to receive food trays and/or milk and then to a cashier. It is not a "scramble type" servery.

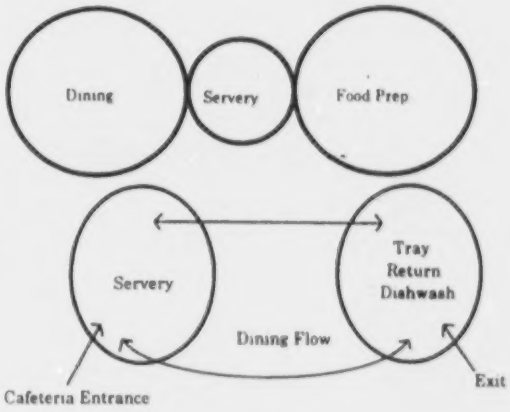
Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Serving area should be located between the food preparation area and the dining area.

- Locate tray return and dishwash area so that students entering and leaving the cafeteria do not cross paths.




Special Finishes:

- Light colored and easily maintained. Ceramic tile walls and quarry tile floors.

Special Utilities:

- As required by equipment, plus a 120 v. A.C. outlet at cashier and conduit for data cable.

Other Requirements:

- If soft drink and other vending machines will be in the school, they should not be located in serving or cafeteria area.
- Lunch meals are served to kindergarten through 6th grade students at 15 minute intervals.
- Pre-Kindergarten lunch period starts prior to the serving period for Kindergarten through 6th grade.
- Design must be reviewed by DISD Food and Child Nutrition Service Department and the City Health Department.
- Refer to the General Requirements section for additional information.

## Special Services - Nurse/Health Services

Description:

- Provide nurse's area near Administration. This area contains a nurse's office, an exam area, and restrooms. Activities to take place in this area include eye and ear testing and special screening.

Quantity and Size:

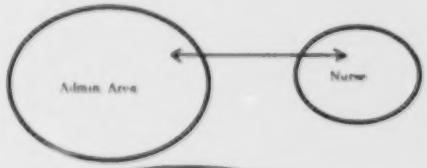
- Refer to "List of Required Spaces."

Anticipated Occupancy:

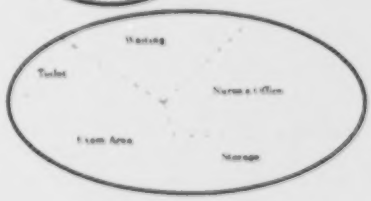
2 students on cots
1 student for testing
1 nurse

Functional Relationships:

- Nurse's area is near Administration.




- The nurse's area is made up of the following:




Special Finishes:

- Walls and floor should be easy to clean.

Special Utilities:

- Locate a toilet room adjacent to the exam area. Locate a sink with hot and cold water and ice machine in the exam area.

Other Requirements:

- Provide accommodations for a small refrigerator with ice dispenser in the exam room.
- Exam area will accommodate two separate cots with a screen divider arranged to allow for visual contact by the nurse. The exam area will also accommodate a scale, eye charts, bulletin boards, a display rack for brochures, and brochure storage.
- Provide a secured medicine cabinet and allow for storage of bandages and paper goods.
- Provide an office for the nurse adjacent to the exam area to accommodate a desk, telephone, file cabinet, card files, and a computer.
- Provide a wheelchair-accessible sink.
- Refer to the General Requirements section for additional information.



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## Special Services - Testing/Conference Room

Description:

- The testing room is a small room for testing the individual students ranging in age from Pre-Kindergarten to 6th grade. This room should allow a 1:1 or 2:1 interaction with varying types of furniture configurations.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

1 student
1 teacher or diagnostician

Functional Relationships:

- Locate the testing/conference room near administration.

Special Finishes:

- Provide acoustic and visual control.

Special Utilities:

- Provide electrical outlets for testing equipment.

Other Requirements:

- Provide a small scale table and chairs to accommodate students.
- Refer to the General Requirements section for additional information.

**Special Services - Counseling/Conference Area**

Description:

- The area will accommodate teacher and parent/student counseling conference activities.

Quantity and Size:

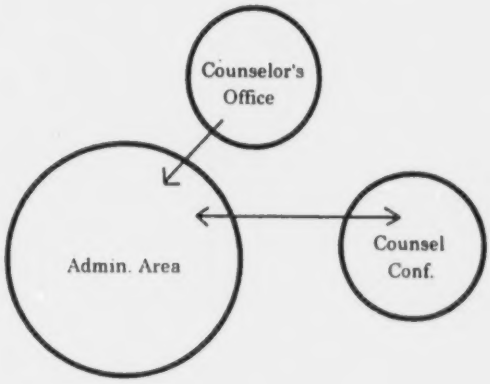
- Refer to "List of Required Spaces."

Anticipated Occupancy:

4 people

Functional Relationships:

- The counseling/conference area should be located near the administrative area.




Other Requirements:

- The counseling/conference room will accommodate a small conference table to seat 4 people.
- Provide shelving for books, pamphlets, etc.
- Provide telephone.
- Refer to the General Requirements section for additional information.

## Administration - Principal

Description:

- The principal's office serves as both an office/work area for the principal and for small meetings with parents, students, and visitors.

Quantity and Size:

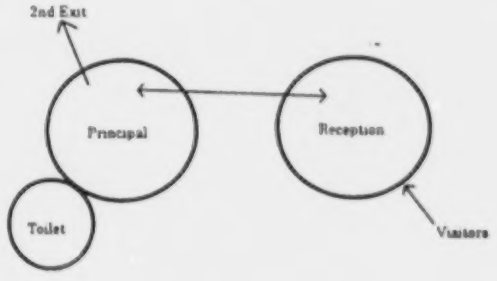
- Refer to "List of Required Spaces."

Anticipated Occupancy:

1 person

Functional Relationships:

- The principal's office should be located adjacent to the reception area.
- The principal's office should have a secondary exit not through the reception area.




Special Utilities:

- Locate a private toilet room adjoining the principal's office.

Other Requirements:

- This office should accommodate a desk, computer, intercom, credenza, guest seating, and a small conference table with chairs.
- Refer to the General Requirements section for additional information.

## Administration - Assistant Principal

Description:

- The Assistant Principal's office serves as both an office/work area for the assistant principal and for small meetings with parents, students, and visitors.

Quantity and Size:

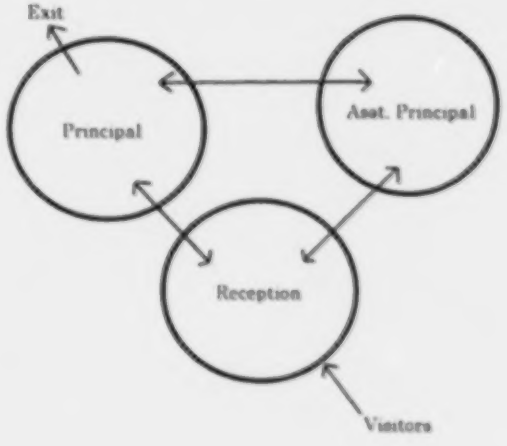
- Refer to "List of Required Spaces.

Anticipated Occupancy:

1 person

Functional Relationships:

- This office should be located adjacent to the principal's office.




Other Requirements:

- This office should accommodate a desk, credenza, and guest seating.

**Administration - Reception/Secretary/Clerk**

Description:

- The reception area consists of visitor seating to accommodate six (6) people, a counter should be provided which separates the public and the clerk work area. The teacher mailboxes (number of employees plus 10%) should be accessible to the teachers from front side of the counter and could have open backs that can be accessed from an adjacent workroom. In addition, a secretary and clerk are located behind the counter.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

6 visitors
3 clerks

Functional Relationships:

- Access to the copy machine area.
- This reception area is part of an "office complex" which contains the principal's office, assistant principal's office, work area for 3 clerks, a secretary, and a workroom.
- One of the clerks should be in a small office to limit distraction but with a view into the reception area to monitor visitors, when the others are away.
- The records' vault needs to be away from the public area.
- Access to nurse's office.

Other Requirements:

- Provide toilet areas for male and female administrators near the administration area.
- Anticipate that a fourth clerk/aide will be added as the student population increases.
- Provide for:
  - Power for radio chargers.
  - Intercom and bell control.
  - Computers/printers.
  - Telephones.
- Refer to the General Requirements section for additional information.

**Administration - Workroom/Copier - Records Vault**

Description:

- Workroom/copier space will serve for duplication of materials and layout space for the office staff.
- Records vault will provide for secure storage.

Quantity and Size:

- Refer to the "List of Required Spaces."

Anticipated Occupancy:

3 clerks and a secretary

Functional Relationships:

- The workroom is located adjacent to the reception area and the teacher mailboxes.
- The records vault needs to be adjacent to reception area.

Special Utilities:

- Provide electrical outlets for duplication of materials and office equipment.
- Provide HVAC and exhaust as required for duplication and lamination equipment.

Other Requirements:

Workroom/copier space:

- Provide secured cabinets for chemical storage and supply storage.
- Provide sink with built-in counter for lay-out space; locate counter near the teacher mailboxes.
- Refer to the General Requirements section for additional information.

Records Vault:

- Provide storage shelves.

**Support Textbook Storage**

Description:

- The textbook storage room should accommodate approximately 7,000 books or 7 books per student. In addition, this room will be used to store easels, "kits" (30" x 24" high), "big books", colored paper, and paper racks.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- The textbook storage room should be located near the loading dock and elevator (if one provided). Because textbook deliveries will be made through the loading dock, provide ramps if there are any steps between the dock and the storage room.

Special Finishes:

- Provide vinyl tile flooring.

Other Requirements:

- Provide various sizes of shelving with extra deep shelves to accommodate teaching "kits," "big books," and colored paper.
- Provide flat files, built-in.
- This room will be empty during part of the year and could be used for other storage functions.
- Limit access by special keying requirements per DISD standards.
- Refer to the General Requirements section for additional information.

**Teacher Support - Teacher's Conference Room**

Description:

- This conference room should accommodate 4-8 people at a conference table.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

4 - 8 persons

Functional Relationships:

- The teachers' conference room should be located centrally in the building and near the library and other teacher resources.

Other Requirements:

- This room may also be used for small student groups.
- This room may also be used as counseling space.
- Provide 8' whiteboard and 8' chalkboard.
- Provide for:
  Storage.
  Audio/Visual screen.
  Overhead Projector.

**Teacher Support - Teacher's Planning Room**

Description:

- The teacher's planning room should accommodate work tables and "soft" seating to accommodate up to 10 teachers.

Quantity and Size:

- Refer to "List of Required Spaces."

Anticipated Occupancy:

10 teachers

Functional Relationships:

- The teacher's planning room should be located centrally in the building convenient for teachers.

Special Utilities:

- Provide an outside telephone line.

Other Requirements:

- Provide sofas, chairs, tables, and a small coffee bar inside the teacher's planning room.
- Provide a small telephone closet with space for a chair and a built-in telephone shelf.
- Provide for:
  - Vending machine.
  - Refrigerator.
  - Microwave.
  - Coffee Pot.
- Refer to the General Requirements section for additional information.

**Core Areas - Teacher/Administrative Restrooms**

Description:

- Restroom facilities for teachers and administrative staff.

Quantity and Size:

- The quantity and size of restrooms will be determined by referral to appropriate building codes and by the individual configuration within the limitations of the grossing factor. Refer to "List of Required Spaces."

Functional Relationships:

- Locate the teacher/adult restrooms centrally in the building. Recommendation: one (1) near administrative offices and one (1) strategically in the school floor plan.

Special Finishes:

- Wall base and floor materials should be ceramic tile. (Vinyl wall covering could be substituted at non-plumbing walls for cost savings considerations.) Counter tops and toilet partitions should be color core plastic laminate. Ceiling material should be an acoustical tile ceiling.

Special Utilities:

- Lighting should consist of a cove type design located over the lavatory and toilet fixture wall. Proper ventilation and exhaust systems should be incorporated.

Other Requirements:

- Provide 4'-0" wide full height mirror on one wall location in addition to mirror at lavatory counter.
- Provide for:
  Counter for books and briefcase.
  Coat hook.
- Refer to the General Requirements section for additional information.

**Core Areas - Pre-Kindergarten, Kindergarten, and 1st Grade Toilet Areas**

Description:

- Toilet areas adjacent to each Pre-Kindergarten, Kindergarten, and 1st grade classrooms. Hardware mounting height at the doors to the toilet areas should accommodate age groups 3 - 6 years of age. Fixture quantity should be provided in each toilet area to accommodate a student population of 44.

Quantity and Size:

- Provide one toilet room per Pre-Kindergarten, Kindergarten, and 1st grade classroom. Size of toilet room should be a maximum of 25 s.f.

Functional Relationships:

- Locate these toilet areas at each Pre-Kindergarten, Kindergarten, and 1st grade classroom. These rooms should be located between classrooms but individual toilets should not be accessible by two classrooms.

Special Finishes:

- Floor material and 4'-0" high wainscot on all walls and base material should be ceramic tile. Vinyl composition tile should be substituted for floor material if cost saving considerations are required. Acoustical ceiling tile should be considered for ceiling installation with cove type lighting at fixture locations.

Special Utilities:

- Provide proper ventilation and exhaust systems and floor drains.

**Core Areas - Student Restrooms**

Description:

- Restroom facilities to accommodate the total student population excluding the Pre-Kindergarten and Kindergarten students.

Quantity and Size:

- The quantity and size of restrooms will be determined by referral to appropriate building codes and by the individual configuration within the limitations of the grossing factor.

Special Finishes:

- Wall base and floor materials should be ceramic tile. Ceiling material should be acoustical tile.

Special Utilities:

- Lighting should consist of a cove type design located over the lavatory and toilet fixture wall. Proper ventilation and exhaust systems should be incorporated. Provide wall mounted lavatories without counter. For the boys' restrooms, provide wall mounted urinals in addition to wall mounted water closets.
- Provide hand dryers rather than paper towel dispensers.

Other Requirements:

- For all restrooms, provide floor-supported partitions and standard height dimensions.
- Access to restrooms will be the "doorless" design.
- Refer to the General Requirements section for additional information.

## Core Areas - Building Custodial Areas

Description:

- One closet to be provided for every 8 classrooms - approximately 60 s.f. each.

Quantity and Size:

- The quantity of closets will vary depending on the design layout. Each closet should be sized large enough to accommodate equipment stored inside, within the limitation of the grossing factor.

Functional Relationships:

- The closets should be distributed as is appropriate.

Special Finishes:

- "Wet Walls" (4'0" Wainscot) and base should be ceramic tile. Floor should be sealed concrete with required floor drains. Ceiling should be exposed with pendant industrial type fixtures utilized.

Special Utilities:

- Extra deep floor mounted utility sinks (hot and cold water) with proper trap clean-out should be provided.

Other Requirements:

- Equipment which will be stored in this room will include vacuum cleaners, floor machine, mop buckets, shampoo equipment, and custodial carts.
- Wall surfaces above the utility sink should be used for open shelving.
- Durable rack systems should be utilized for mop and broom storage.
- Provide lock on door.
- Refer to the General Requirements section for additional information.

**Core Areas - Building Storage Areas**

Description:

- These areas will be used for general school storage and may be shared by the central plant and teacher/administrative groups.
- Provide storage for lawnmowers, grounds equipment with 6' wide roll-up door. Provide for lockable flammable storage cabinet (for gasoline).

Quantity and Size:

- The quantity of storage areas to be provided will vary depending upon design configurations. The size of the storage area is limited by the overall grossing factor.
- Custodial storage shall be approximately 200 s.f.

Functional Relationships:

- These rooms should be distributed throughout the facility.

Special Finishes:

- The areas should have exposed ceilings with industrial type pendant fixtures to maximize storage capacity. Walls should be painted block or gypsum board with open adjustable shelving attached (if required). Floors should be sealed concrete.

Other Requirements:

- All areas should be secured.
- Code compliance and proper construction must be provided for designated chemical and flammable storage areas.
- Refer to the General Requirements section for additional information.
- Lockable storage cabinets in custodial storage.

## Core Areas - Central Plant and Custodial Office

Description:

- Housing for all mechanical and electrical equipment.
- Central custodian office (approximately 100 s.f.).

Quantity and Size:

- Quantity and size will vary depending on design considerations, within the limitations of the grossing factor. Refer to "List of Required Spaces."

Functional Relationships:

- The central plant is located centrally in the building, but in the "noise" zone.
- Near Loading Dock.
- Locate custodian office near the administration area.

Special Finishes:

- Provide sound isolation details in the construction of this space, i.e., isolators at equipment pads, sound block walls, sound seals at doors, tectum panels at ceilings. All enclosed central plant space should have a concrete floor (sealed or epoxy coated), epoxy painted block walls, and painted ceiling (exposed).

Special Utilities:

- Lighting should be adequate for proper monitoring and maintaining of equipment. Lighting fixtures should be pendant and industrial type. Central plant facility should contain separate boiler (with booster-heater) and water storage tank to accommodate health code requirements for water temperature control and required quantities for cafeteria use.

Other Requirements:

- Equipment should be planned and located for required access and removal when required.
- Central plant facilities include:
  - Electrical/Telephone Closets
  - Air Handling Space
  - Boiler Room Space
  - Transfer Station
  - Emergency Generator Space
  - Repair and Shop Space
  - Cooling Tower Space if Required
- Exterior central plant space should be secured by using lockable metal fencing and integrated with landscaping.
- Telephone.
- Refer to the General Requirements section for additional information.

**Exterior Spaces - Kindergarten Garden**

Description:

- A "garden" area environment should be maintained. This area should also be enclosed by a fence or other means. A similar space should also be provided for the Instructional Science Classroom.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- This area should be located adjacent to the Kindergarten and Pre-Kindergarten area. It should be separated from the older children's play area.

Special Utilities:

- Provide freeze proof hose bib with vacuum breakers for planting area.

Other Requirements:

- Provide lockable exterior tool storage unit for containing garden tools.
- This space will support exterior science projects and planting/gardening projects.
- Surround with a lockable fence, high enough to contain students and provide protection of projects and contents during non-school hours.
- Refer to the General Requirements section for additional information.

**Exterior Spaces - Playground/Physical Education Area**

Description:

- The playground area is provided for recess and unstructured play. In addition, several Physical Education events take place on these fields, as well as after school activities.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- Locate these areas close to the gymnasium and cafeteria.

Special Finishes:

- Use 6" of sand or other appropriate material.

Special Utilities:

- Provide freeze proof water hydrants with vacuum breakers and "key handle" spaced so that a 100' hose can reach all areas of ground cover.

Other Requirements:

- Some paved area with activity stripping is required.
- Playfields should be sodded.
- Provide 4 basketball goals on posts on an asphalt court.
- Provide 2 sleeves for poles in playfields for use with the following activities:
  - Tetherball
  - Volleyball
  - Badminton
- Provide 2 soccer goals in the playfields.
- Provide 2 baseball backstops in the playfields.
- Provide standard playground equipment.
- Provide swings.
- Provide slides.
- Provide climbing bars.
- Provide a sandy area.
- Refer to the General Requirements section for additional information.

**Exterior Spaces - Queuing and Drop-off/Pick-Up**

Description:

- The main drop-off area of the school should include some visitor parking and should provide for separation of bus traffic and parent traffic. The bus area should include a canopy for loading and unloading during inclement weather. Provide an area within the building for student reception (near cafeteria) before classes begin that allows for supervision. There is a separate drop-off and pick-up area for Pre-Kindergarten and Kindergarten students with an adjacent holding area (perhaps in corridor space between the Pre-Kindergarten and Kindergarten classes). This will allow the students to remain in the building until they are picked up.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

Other Requirements:

- Plan these areas to maximize the safety of the children.
- Refer to the General Requirements section for additional information.

## Exterior Spaces - Parking

Description:

- Provide a fenced lot with spaces for faculty and staff and a separate visitor parking area for 10-15 vehicles near parent drop-off.

Other Requirements:

- Maintain easy access to the entry.
- Parking areas should be compatible with overall site design and development.
- Parking design should comply with code and handicapped accessibility requirements.
- Provide security with ease of access by staff during the school day.
- Provide parking for (2) service vehicles near the loading dock area.

**Exterior Spaces Service**

Description:

- The service area should accommodate an area for servicing and deliveries and an area for trash removal. The service should also contain an outside "fenced" area for containment and disposal of trash (primarily paper and light weight plastic products). The area includes space for "hose" washing of large items, i.e., mats, grating, equipment, etc.

Quantity and Size:

- Refer to "List of Required Spaces."

Functional Relationships:

- This area, which is also for dumpster placement, should be remote and far away from back entry of kitchen area.

Special Finishes:

- Ground surface at service area to be concrete with area drains as required.

Other Requirements:

- The loading delivery area should accommodate box trucks and trailer trucks. These trucks should not cross gas lines or grease traps.
- Locate the trash dumpster away from the back entry to the building. Trash may be hauled or incinerated. Locate a 2nd dumpster for recyclables adjacent to the trash dumpster.
- Provide a secured storage area off of the loading /delivery area for storage of paper products and cleaning supplies.
- Provide a vision panel and bell at back entry at exterior door to loading dock.
- Loading delivery area shall open to a corridor but not directly into kitchen.
- Hide trash area and locate it so children do not have to pass while entering or leaving building to playground, etc.
- Refer to the General Requirements section for additional information.

MANAGEMENT PLAN

## Project Schedule

| Phase | Day | Start | Day | Complete | Duration |
|---|---|---|---|---|---|
| Planning Phase | Tues | 1-Feb-94 | Mon | 25-Apr-94 | 83 |
| | | | | | |
| Schematic Design | Mon | 25-Apr-94 | Tues | 7-Jun-94 | 43 |
| SD Review | Tues | 7-Jun-94 | Thurs | 23-Jun-94 | 16 |
| SD Presentation/Board | Tues | 14-Jun-94 | | | |
| SD Approval - Board | Thurs | 23-Jun-94 | | | |
| | | | | | |
| Design Development | Fri | 24-Jun-94 | Tues | 16-Aug-94 | 53 |
| DD Review | Tues | 16-Aug-94 | Tues | 13-Sep-94 | 28 |
| DD Presentation/Board | Thurs | 25-Aug-94 | | | |
| DD Approval - Board | Tues | 13-Sep-94 | | | |
| | | | | | |
| Construction Documents | Wed | 14-Sep-94 | Tues | 6-Dec-94 | 83 |
| 60% CD Review | Mon | 31-Oct-94 | Fri | 11-Nov-94 | 11 |
| 95% CD Review | Tues | 6-Dec-94 | Tues | 10-Jan-95 | 35 |
| 95% CD Presentation/Board | Tues | 13-Dec-94 | | | |
| 95% CD Approval/Board | Tues | 10-Jan-95 | | | |
| | | | | | |
| Bid and Negotiation | Mon | 16-Jan-95 | Mon | 27-Feb-95 | 42 |
| | | | | | |
| Construction | Mon | 27-Feb-95 | Fri | 1-Mar-96 | 368 |
| | | | | | |
| Move-In | Fri | 1-Mar-96 | Mon | 1-Apr-96 | 31 |
| | | | | | |
| Warranty | Fri | 1-Mar-96 | Fri | 28-Feb-97 | 364 |
| | | | | | |

The Dallas Independent School District

# ADMINISTRATIVE GUIDELINES AND PROCEDURES MANUAL

## Section II: Administrative Guidelines and Procedures

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# 1.0 INTRODUCTION

## 1.1 Using the Manual

The DISD Administrative Guidelines and Procedures Manual is written to provide a guideline for procedures, sequences, and division of responsibility to be followed by DISD, the Project Manager, and the Architect/Engineer, for the 1992 Facilities Bond Program and all construction programs.

The Manual is intended to apply to both renovations and new construction projects.

DISD reserves the right to make changes to the Manual, and the fact that changes are made will not serve as the basis for any claims against DISD, unless it can be shown that the total of all changes significantly increases the work of the claimant beyond that which it would have been required to perform if all of the provisions of the Manual were strictly required. DISD reserves the right to waive procedures required by the Manual for particular projects without waiving those procedures for other projects.

In any instance where the Guidelines provide for performance by DISD, and that performance is needed by the Project Manager, or the Architect/Engineer, but has not been accomplished, the party needing the performance shall promptly notify in writing the Executive Manager of the particular need. Absent such notification, any complaint about lack of performance by DISD shall be waived.

## 1.2 Guidelines and Procedures

The Guidelines and Procedures are written instructions to guide DISD, the Project Manager and the Architect/Engineer. Contracts shall be the primary documents for defining scope of services and responsibilities, with the Manual secondary.

## 2.0 CONTINUING ACTIVITIES

### 2.1 General Division of Responsibilities

The DISD's role is to:

- Direct the development of a management strategy plan for delivering the Facilities Bond Program's projects on schedule and within the Bond Program's budget.
- Oversee the development of a planning and implementation matrix which defines the role and responsibility of each party involved during each phase of work for cost control and schedule control.
- Direct the development of a strategy plan.
- Lead the overall planning and design process for the DISD Facilities Bond Program.
- Direct and oversee all planning and design work administered by the Program Management Consultant firm, a consultant to DISD.
- Provide relative design and renovational criteria.
- Review projects for uniformity to program requirements and district standards.
- Review design documents for conformance to DISD criteria.
- Facilitate the advisory groups involved in facilities planning and design.
- Prepare and present all documentation requiring approval by the Board of Education.
- Responsible for the Facilities Bond Program cost management through completion of designs.
- Provide fiscal accounting services for the entire Bond Program.
- Monitor and evaluate the performance of the Project Manager.
- Administer the overall program.

The Project Manager's role is to:

- Provide Project management monitoring of the Architect/Engineer and the Contractor activities during construction.
- Coordinate a Project's activities with other Projects on a single campus.
- Report to DISD on project activities through Project meeting minutes and monthly Project Status Reports or as required by DISD.
- Coordinate project activities between DISD, DISD Consultants, the Architect/Engineer, the Contractor, and other Project related organizations.

The Architect/Engineer's role is to:

- Manage all design activities to complete a Facility design within the established Budget, Schedule, and Guidelines.
- Manage and coordinate the activities of the Architect/Engineer's Consultants, during the design and construction phase.
- Cooperate with DISD, DISD Consultants, the Project Manager, and other Project related organizations to meet Project requirements.
- Represent DISD during the construction phase.

### 2.2 Project Grouping

Projects may be grouped to create a cost effective design and bid package while reducing the management, administrative, and DISD review/approval efforts.

Combined projects may be awarded as a single design and/or construction package for an Architect/Engineer or a Contractor.

The Project Manager's role is to:

- Develop a management plan.
- Make recommendations to DISD for combining small projects based upon:
  - Close proximity
  - Similar scope of work
- Combine small campus projects in adjacent groups based on DISD's Project Priority list.

### 2.3 Management Plan

The management plan shall establish a planning procedure to identify all DISD Schedules, Budgets, and design requirements that are to be met. The plan update shall illustrate and confirm Project Schedules, cost and scope of work.

The Project Manager's role is to:

- Prepare a comprehensive management plan.
- Update the plan, at least monthly.

The Architect/Engineer's role is to:

- Provide input for the plan update as requested by the Project Manager.

The DISD's role is to:

- Provide information to the Project Manager as required to establish a management plan.
- Review and approve the Project Manager's management plan and its updates.

### 2.4 DISD Budget Schedule and Scope of Work Updates

The DISD's role is to:

- Furnish the preliminary Schedule, Budget, and scope of work for each project.

The Project Manager's role is to:

- Meet with DISD, visit the site, and evaluate the program to confirm that the assigned Budget is appropriate to accommodate all project costs related to Project design, construction and other items such as fees for testing, reimbursable expenses, etc.
- Itemize in the Budget all Project costs including professional fees, construction cost, fixed and moveable equipment, site acquisition and development, and other Project related costs.
- Confirm that the DISD provided Budget is realistic and achievable. Make recommendations to meet or change the budget.
- Review the Budget throughout the Project duration and report monthly any changes for approval by DISD.

The Architect/Engineer's role is to:

- Visit the Project site, review the program, Educational Facility specifications, and DISD design standards.
- Consult with the Project Manager and DISD to establish the scope of services and Project requirements.

## 2.5 Scheduling

The following Schedules shall be required for the management of the Projects:

- Master Schedule - Project Manager
- Project Schedule - Project Manager
- Design Schedule - Architect/Engineer
- Construction Schedule - Contractor

The Project Manager shall incorporate Schedule updates from the Architect/Engineer's Design Schedule and the Contractor's Construction Schedule into the monthly reports.

### 2.5.1 Program Master Schedule

The Project Manager shall prepare an overall bar chart Master Schedule and update it monthly based on project progress.

Project Tasks

- Project Planning
- Design Phase
- Bid and Award Phase
- Construction Phase

### 2.5.2 Project Schedule

The bar chart Project Schedule shall be prepared during the initial stages of the Project and updated monthly by the Project Manager. The Project Schedule shall include:

- Project Planning
- Schematic Design Start
- Schematic Design Review/Approval
- Board Approval
- Design Development Start
- Design Development Review/Approval
- Board Approval
- Construction Documents Start
- Construction Documents Review/Approval
- Agency Review/Approval
- Bid and Award Phase
- Construction Milestones
- Move-In
- Warranty Period

The Project Manager's role is to:

- Prepare graphical Project Schedule using the MICS (Management Information Control System) reflecting major activities with start and completion dates.
- Update the Project Schedule on a monthly basis or when significant events occur.

The Architect/Engineer's role is to:

- Provide a Design Schedule to the Project Manager for incorporation into the Project Schedule. The Architect/Engineer's Design Schedule must comply with the milestones of the Project Schedule.

The DISD's role is to:

- Review and approve the Project Schedule and subsequent updates.

### 2.6 Invoices

All invoices shall be submitted in 4 originals with original signatures on each document. One original shall be retained by:

- DISD Accounting (1 copy)
- DISD Executive Manager (1 copy)
- Project Manager (1 copy)
- Architect/Engineer (1 copy)

All invoice or pay requests shall be submitted by the fifth day of each month.

Each Project Manager, Architect/Engineer, Contractor, Consultant, Supplier, and Vendor invoice or pay request shall be accompanied by supporting documentation describing, dating, qualifying and quantifying the billed amount.

The invoice or pay requests shall also include M/WBE amounts.

Each invoice or pay request for Projects that include multiple campuses shall reflect sufficient detail to break down the invoicing amount to each campus.

All Project Manager, Architect/Engineer, and Consultant invoices shall list separately professional fees and reimbursable expenses. Original receipts for all reimbursable expenses must be provided.

All Project related accounting records shall be made available at any time upon request by DISD.

The Project Manager's role is to:

- Collect, review and recommend appropriate action on invoices to DISD.
- Review each invoice for the items listed below:
  - Correct invoice form
  - Correct number of copies
  - Mathematical accuracy
  - Project reference name/number
  - DISD purchase order number
  - Contract amount limit
  - Percent work completed
  - Deliverables provided
  - Receipts submitted as back-up for reimbursable expenses
  - Appropriate signature.

Signify acceptance of each invoice by stamping, in red ink, the summary page/copy of the documents with an approval stamp. The recommendation for payment shall be made by signing and dating each stamp.

Forward the invoice to DISD within 3 working days with a cover letter stating that the invoice has been reviewed, is accurate, and appropriate for goods and services received per contractual agreement and is recommended for payment.

Promptly return disapproved invoices to originator with reason in writing with copies to DISD.

DISD reserves the right to conduct a records audit at any time of any Project related Architect/Engineer, Project Manager, Contractor, Consultant, Vendor, Supplier or Installer Contract at any time during progress of Project.

### 2.6.1 Project Manager Invoices

The Project manager invoices are categorized into the following types:

- Basic services
- Reimbursable expenses
- Additional services

Invoices for reimbursable expenses shall include all original documents/or approved copies supporting these expenses with copy of prior approval attached.

All invoices shall have a purchase order number prior to submittal.

Invoices for additional services require prior approval of Professional Service Supplemental Authorization (PSSA) from DISD. These invoices shall have a separate itemized listing of all direct expenses.

The Project Manager's role is to:

- Submit basic services invoices.
- Submit a pay request for reimbursable expenses to DISD on DISD "approved" forms with supporting back-up attachments.
- Submit added services invoice, after DISD PSSA approval, using DISD "approved" form.

The DISD's role is to:

- Receive invoices for basic and additional services and reimbursable expenses from the Project Manager.
- Review, verify and approve the Project Manager's invoice.
- Review the Project Manager's invoice and notify the Project Manager of any errors or discrepancies to resolve prior to payment, and pay proper invoices.
- Monitor the status of payment to the Project Manager through DISD payment reporting system.

### 2.6.2 Architect/Engineer and Consultant Invoices

The Architect/Engineer and Consultant invoices are categorized into the following types:

- Basic services
- Reimbursable expenses
- Additional services

Invoices for reimbursable expenses shall include all original documents or approved copies supporting these expenses with a copy of prior approval attached.

All invoices shall have a purchase order number prior to submittal.

Invoices for additional services require prior approval of Professional Service Supplemental Authorization (PSSA) from DISD. These invoices shall have a separate itemized listing of all direct expenses.

The Architect/Engineer's role is to:

- Submit invoices on a monthly basis based on percentages set out in their contracts, or if not specified then, in the following percentages:
- Schematic Design = (15% of total fee)
- Design Development = (20% of total fee)
- Construction Development = (35% of total fee)
- Bid = (5% of total fee)
- Construction Administration = (23% of total fee)
- Post-Construction = (2% of total fee)
- The Architect/Engineer's billed percentage during construction shall not exceed the percentage of completed construction.
- Submit to the Project Manager 3 original signature invoices using the DISD form.

The Project Manager's role is to:

- Review the Architect/Engineer's and Consultant's invoice within 3 days of receipt and notify the Architect/Engineer of any errors or discrepancies to resolve prior to submittal to DISD for payment.
- Monitor the status of payment to the Architect/Engineer through the DISD payment reporting system.

The DISD's role is to:

- Reserves the right to review Architect/Engineer invoices prior to payment.

## 2.7 Project Status Report/Minutes

### 2.7.1 Monthly Project Status Report

The Project Manager's role is to:
Prepare a Monthly Project Status Report and submit 2 copies to DISD each month.

- Detail the following items in the Monthly Report:
  - Executive Summary: An overview of current project status with reference to major Project tasks, milestones, and list major issues impacting progress.
  - Project Schedule: Update milestone Schedule.
  - Project Budget: Project Budget and change update.
  - Current Progress: A summary of significant events and accomplishments during the month.
  - Projected Activities: Major activities scheduled for the coming month.
  - Key Issues: Summaries of conflicts that may affect the Construction Schedule, Budget, quality control, management or administrative activities.
  - Pending claims.
  - Minority/Women Business Enterprise (M/WBE): Contracting to date.

### 2.7.2 Weekly (or Bi-Weekly) Project Status Minutes (as determined)

The Project Manager's role is to:

- Prepare weekly Project Status Minutes and submit 1 copy to DISD each week.
- Detail the following items in the Weekly Project Minutes:
  - Previous Week's Progress: A summary of significant events and accomplishments during the week
  - Up-Coming Week's Activities: Major activities scheduled for the following week
  - Decision Tracking Items: Key issues that may become conflicts and require immediate action
  - Recommendation Narrative: Recommendations of solutions for identified problem issues
  - Design Schedule/Construction Schedule
  - Change Order Log: Updated Change Order log during construction phase from MICS
  - Request for Information: Updated request for information log
  - Weather Conditions
  - Pending Claims

## 2.8 Correspondence

Project Correspondence includes all Contract documents, memoranda, transmittals, letters, forms, reports, minutes of meetings, change requests and Change Orders, instructions, sketches, brochures, shop drawings, samples, manufacturer's data, photographs and any other form of project information.

Correspondence forms and formats shall be in accordance with the Guidelines and Procedures Manual.

All project directives, approvals, agreements, inquir es and responses shall be in writing.

The Project Manager's role is to:

- Maintain a Project correspondence file in accordance with the DISD approved format.

Review all incoming and outgoing Project correspondence and make appropriate distribution by:

- Date stamping.
- Taking appropriate action as required.
- Processing and filing.
- Transmitting as necessary to appropriate Project Team Members.

The Architect/Engineer's role is to:

- Maintain a Project correspondence file in accordance with the DISD approved format.

## 2.9 Project Files

The Project Manager's role is to:

- Implement the filing procedures and list of standard Project files as detailed in the DISD approved format
- Verify that Project files are current, complete and comprise a comprehensive, orderly and retrievable record of all incoming, outgoing and inner-office Project communications.
- Turn over all "original" Project files to DISD at the end of the Program.
- Maintain, file and clearly identify Project related documents in accordance with the DISD approved format.

The Architect/Engineer's role is to:

- Turn over all his original Project files to DISD at the end of a Project.

The DISD's role is to:

- Have the right to review the Project Manager and Architect/Engineer files periodically during the course of the Project.
- Receive, and at its option, review and store all the Project Manager and Architect/Engineer files at the end of each Project.

## 2.10 Project Meetings

The Project Manager shall produce the official record minutes of Project meetings.

These minutes shall provide sufficient detail to be a record of fact for all Project information, communications, correspondence, or topics discussed during Project meetings.

Action items shall have a responsible Project Team Member identified.

Items which have not been resolved shall continue to be listed in subsequent minutes of meetings and referred to by the original number. Additional information relating to an item carried from a previous meeting may be added along with the date.

The Project Manager's role is to:

- Conduct Project meetings to review and verify the general status and progress of the Project. Special Project meetings shall be held as necessary. These meetings are as follows:
  - Periodic Pre-Design Phase Meetings
    The purpose of these meetings shall be to review the status of the Project Budget, Schedules, activities, the Project educational specifications, program, and any items affecting the progress of the Project.
  - DISD Design Phase Meetings
    The purpose of these meetings shall be to review specific items requiring DISD's input.
  - Regular Design Phase Meetings
    The purpose of these meetings shall be to review the status of the design, the progress of Project related activities, and identify and resolve critical issues.

- Special Project Meetings
  The purpose of these meetings shall be to respond to specific issues needing immediate attention, or issues inappropriate to include in regular meetings.
- Weekly (or Bi-Weekly) Construction Phase Meetings
  The purpose of these meetings shall be to review the progress of the Project, discuss critical activities, and identify potential conflicts.
- Arrange and conduct these meetings and perform the following tasks:
  - Consult with the Architect/Engineer regarding agenda items.
  - Prepare the agenda for the meetings.
  - Distribute the agenda as part of the minutes of the previous meeting.
  - Record, sign and distribute the minutes.
  - Maintain a file for all meeting minutes.
  - Distribute meeting minutes within 3 days of each meeting to all attendees and any other parties affected by decisions and comments made at the meeting.
  - Notify, within the minutes, all parties that they have 5 working days to make any objection or correction to the minutes, and that these objections/corrections must be in writing.

- Include the following items in each set of minutes:
  - Date, location and time of the meeting
  - Attendees, their firms and their positions
  - Items discussed
  - Decisions reached or presented
  - Project status
  - Any open items to be resolved
  - Responsible party for items requiring action
  - Distribution list

The DISD's role is to:

- Have the right to attend any meetings.

## 2.11 Hazardous Materials

DISD shall be responsible for providing material confirmation testing, condition assessment, and abatement, if necessary, in the event a hazardous material is suspected during construction.

Any Project personnel who discovers material that may be suspected to be hazardous and that is located within the construction zone shall immediately inform the Project Manager.

The DISD's role is to:

- Use DISD's Asbestos Management Plan Books to verify whether asbestos containing materials have been abated as a Project campus.
- Determine the priority of Projects to be abated and Schedule the completion of abatement for each Project.
- Provide information to the Project Manager on each Project abatement Schedule to include on the Master Schedule.
- Coordinate asbestos removal and attain plan approval from the appropriate regulatory agency for permits and procedures for work near asbestos abatement areas.

The Project Manager's role is to:

- Coordinate between Project Team and DISD's asbestos abatement team.
- Advise the Architect/Engineer of any area containing asbestos that cannot be abated prior to Scheduled construction.
- Monitor and keep DISD informed of Contractor work-around activities during abatement.

The Architect/Engineer's role is to:

- Identify the Project areas in the existing facilities to be remodeled and request from DISD that asbestos assessment be completed prior to Project design phase start up.
- Provide provisions, in the bid documents, for work-around to proceed with minimum Project Schedule impact.
- Immediately inform DISD, in writing, when suspect materials are discovered in the construction area.

The Project Manager's role is to:

- Immediately inform DISD, in writing, when suspect materials are discovered in the proposed construction area.

## 2.12 Community Relations

Any information relating to Projects shall not be made public without written permission from DISD.

The DISD's role is to:

- Manage all community relations
- Make all public announcements pertaining to DISD Projects
- Announcements
- News Media coverage
- Public complaints.

## 2.13 Professional Services Selection Procedure

### 2.13.1 Generate Request for Qualifications (RFQ) Letter

DISD's role is to:

- Inform Project Manager of specific need for professional services.

The Project Manager's role is to:

- Define nature of scope of work required. (i.e. survey, environmental assessment, architectural services, etc.).
- Define format, number of pages, and organization of Statement of Qualifications (SOQ) submittal.
- Set deadline for receipt of Statement of Qualification (SOQ).

DISD's role is to:

- Review Request for Qualifications letter for approval.

### 2.13.2 Notify Firms for Provision of Professional Services

DISD's role is to:

- Advertise in typical periodicals/newspapers according to standard DISD policy.
- Advise the project manager of any firm with negative experience with the DISD.

The Project Manager's role is to:

- Alert local chamber of commerces, DISD M/WBE office, business councils, professional organizations (AIA).
- Notify firms directly through white/yellow pages in telephone directory.
- Contact firms through DISD Facilities, Maintenance, and Strategic Planning resources.
- Send Request for Qualifications (RFQ) letter to firms acceptable to DISD.

### 2.13.3 Accept Statements of Qualification

The Project Manager's role is to:

- Collect and create a file for Statements of Qualification.
- Establish a log of Statements of Qualification submitted.

### 2.13.4 Evaluate Statement of Qualification Submittals

The Project Manager's role is to:

- Generate specific evaluation criteria (based on Request for Qualification requirements).
- Create committee to participate in review of written Statements of Qualification submittals. Involve appropriate DISD departments such as Facilities, Maintenance, and Strategic Planning.
- Evaluate written Statement of Qualification submittals according to criteria.
- Attach evaluation form to each Statement of Qualification submittal for filing.
- Circulate list of firms submitting Statement of Qualification to appropriate DISD departments for review and response.

DISD's role is to:

- Review list of firms submitting Statements of Qualifications for comment.

### 2.13.5 Create Short List of Qualified Firms (for Interview).

The Project Manager's role is to:

- Compare the results of the evaluations of the written Statements of Qualifications of all review committee members.
- Create a short list (minimum of three) of the most qualified firms. Note: if small project status, single most qualified firm may be identified.

DISD's role is to:

- Review proposed short list for approval.

### 2.13.6 Generate Interview Procedure

The Project Manager's role is to :

- Define organization, format, and time limit for interview.
- Define criteria for interview evaluation.
- Create interview schedule, notify appropriate DISD departments for participation.

### 2.13.7 Notify Firm for Interview

The Project Manager's role is to:

- Telephone firms for confirmation of interview time, and follow up with a written copy and/or facsimile copy.
- Mail notification of interview letter to firms.

### 2.13.8 Conduct and Evaluate Interviews

The Project Manager's role is to:

- Create committee to participate in interview process.
- Evaluate interviews according to criteria.
- Attach interview evaluation form from each member of interview committee to each firm for filing.
- Complete memorandum of selection for each professional services agreement.
- Attach Statement of Qualification evaluation and interview evaluation to memorandum of selection.
- Review evaluations with the Division Executive of the Facilities Bond Program.
- Submit memorandum of selection for each firm to executive director in order of recommendation.
- Negotiate fee for most qualified firm only.

### 2.13.9 Preparation of Professional Services Agreements

Board approval must be obtained for Professional Services Agreements over $25,000. The Division Executive has authority to sign off for Professional Services Agreements under $25,000.

The Project Manager's role is to:

- Prepare letter of agreement for recommended firm.

DISD's role is to:

- Submit recommended firm to General Superintendent for review.
- Prepare Board Document for submittal to Board following review of firm by superintendent.

### 2.13.10 Board Approval of Professional Services

The Project Manager's role is to:

- Notify approved firm of selection.
- Notify unselected firms of status.
- Assemble back-up data for initiation of DISD purchase order.

DISD's role is to:

- Submit purchase order paperwork to DISD.

### 2.13.11 Upon Receipt of Purchase Order

The Project Manager's role is to:

- Issue purchase order number to firm for billing purposes as part of notice to proceed.

## 3.0 PRE-DESIGN PHASE

### 3.1 Project Orientation

### 3.2 Project Orientation Meeting

The DISD's role is to:

- Provide existing Project information to the Project Manager and Architect/Engineer.

The Project Manager's role is to:

- Schedule and conduct a Project orientation meeting with DISD and the Architect/Engineer design team.
- Set the meeting agenda to include the following items:
  - Introduction of Project Team Members
  - Project Goals, Objectives and Procedures
  - DISD's M/WBE goal
  - The Management Plan
  - Project Scope of Work
  - Project Construction Budget
  - Architect/Engineer's request for design related information and special DISD consultants
  - Architect/Engineer's Design Phase Schedule
  - Architect/Engineer's Quality Assurance Program
  - Project Team Organization, role and responsibilities of DISD, the Project Manager, the Architect/Engineer and the Contractor
  - Biweekly project design meetings
  - Project reporting by the Architect/Engineer, biweekly and monthly
  - Design phase submittals and deliverables
  - Regulatory agency/code reviews for compliance
  - Design reviews with DISD staff and the presentations to the DISD Board.
  - Design approvals
  - DISD Administrative Guidelines and Procedures and DISD Design Standards relating to Schematic Design
  - Cost Analysis
  - Construction Cost Estimates
  - Changes in project Scope, Schedule and/or Budget to meet DISD goals and objectives.
  - Bidding alternatives and allowances
  - Claims avoidance and record keeping
- Take and produce minutes of the orientation meeting for distribution to:
  - DISD
  - Architect/Engineer design team members
  - Attendees
  - Convey any DISD direction for Schematic Design
  - Respond to questions and requests by the Architect/Engineer.

The Architect Engineer Shall:

- Attend and participate
- Present the Architect/Engineer's Design Team and Consultants
- Present the Architect/Engineer's Quality Assurance Program for Design
- Present the request for Design related information and special DISD consultants
- Present Architect/Engineer's Design Phase Schedule.

### 3.3 Scope Verification

The DISD's role is to:

- Provide the Project Scope of Work to the Project Manager.

The Project Manager's role is to:

- Review existing drawings, ACM plan, site assessments, current grading plans, and existing site considerations.
- Visit the site, investigate aspects of the existing facilities and conditions directly affected by the scope of work.
- Evaluate to confirm DISD's Project scope of work.
- Reconcile any differences with the results of the Architect/Engineer's evaluation.
- Submit to DISD a written recommendation addressing feasibility of the scope of work and any adjustments needed to achieve Project objectives, available alternatives and options.

The Architect/Engineer's role is to:

- Review existing drawings, ACM plan, site assessments, current grading plans, and existing site considerations.
- Visit the site, investigate aspects of the existing facilities and conditions directly affected by the scope of work.
- Evaluate to confirm the Project scope of work provided by DISD.
- Evaluate the educational specifications and design standards.
- Reconcile any differences with the results of the Project Manager's evaluation.
- Visit the site, investigate aspects of the existing facilities and familiarize themselves with conditions affected by the scope of work.

### 3.4 Budget Verification

The DISD's role is to:

- Provide the Project Budget to the Project Manager.

The Project Manager's role is to:

- Verify the Project Budget provided by DISD.
- Reconcile any differences with the results of the Architect/Engineer's evaluation.
- Submit to DISD a written recommendation addressing feasibility of the Budget and any adjustments needed to achieve Project objectives, available alternatives and options.

The Architect/Engineer's role is to:

- Evaluate to confirm the Project Budget provided by DISD.
- Reconcile any differences with the results of the Project Manager's evaluation.

### 3.5 Schedule Verification

The Project Manager's role is to:

- Develop the Project Schedule.
- Reconcile any differences with the results of the Architect/Engineer's evaluation.
- Submit to DISD a written recommendation addressing feasibility of the Schedule and any adjustments needed to achieve Project objectives, available alternatives and options.

The Architect/Engineer's role is to:

- Evaluate to confirm the Project Schedule.
- Reconcile any differences with the results of the Project Manager's evaluation.

### 3.6 Architect/Engineer Project Assignments

The DISD's role is to:

- Assign the Project Architect/Engineer.
- Provide the Project Manager with a copy of the Architect/Engineer agreement.
- Issue Project scope of work, Budget and Schedule to the Project Manager.
- Initiate campus design teams.

### 3.7 Project Team Chart

The Project organization chart shall reflect the Project Team Member's organizations, Project roles, lines of authority, reporting and lines of communication.

The Project Manager's role is to:

- Identify each organization, key Project personnel, and their responsibilities.
- Establish a clear understanding of hierarchy, reporting functions, and responsibilities to enable each member of the team to function and respond effectively.
- Collect information to complete a consolidated Project organization chart to clearly show the hierarchy and reporting structure of the Team Members and their relationship to each other.

The Team Members Shall:

- Provide to the Project Manager an organization chart for their company identifying the key personnel on the Project, reporting and lines of communication.

### 3.8 Project Directory/Organization

The Project Directory shall be established at Project initiation and expanded as consultants and construction organizations are identified.

The Directory shall contain the names of all key personnel, affiliation, addresses and phone numbers. The Directory shall be distributed to DISD, the Project Manager, the Architect/Engineer, and updated as other key Project team members are selected.

The Project Manager's role is to:

- Create a Project Directory containing the company name, names, titles, addresses, facsimile and telephone numbers of each key Team Member.
- Produce, distribute, and update the Project Directory.

### 3.9 Existing Conditions Information

The Project Manager's role is to:

- Consult with DISD to determine what information is available and the means of retrieval.
- Determine, with DISD, a method for obtaining information not available.
- Assist DISD in implementing the retrieval of information.

The Architect/Engineer's role is to:

- Identify site and existing Facility information required for Project design and request existing information from the Project Manager.

The DISD's role is to:

- Consult with the Project Manager to determine how to provide Project existing conditions information when the requested information is unavailable.

#### 3.9.1 Existing Drawings

The Project Manager's role is to:

- Arrange additional site visits, with DISD approval, as required by the Architect/Engineer.
- Issue, at the kick-off meeting, to the Architect/Engineer all design and existing information available for the existing facilities relative to the Project.
- Attend an on-site meeting with the Architect/Engineer, Consultants, and DISD personnel to familiarize the Architect/Engineer with the site and to gather any additional information that may be required.

The DISD's role is to:

- Provide available existing drawings or computer disk and specifications to the Project Manager for distribution to the Architect/Engineer.
- Arrange for site access as required by the Project Manager and the Architect/Engineer design team.

The Architect/Engineer's role is to:

- Review the existing drawings and verify the accuracy of these drawings for items related to the Project scope of work.
- Request, in writing, from the Project Manager any required information regarding existing facilities.

#### 3.9.2 Demolition

The Architect/Engineer's role is to:

Confirm, define and quantify all areas to be demolished and address the following items:

- Isolation of demolition zone from on-going school operations.
- Protection of adjacent systems, structures, equipment, materials, activities while demolition is in progress.
- Include in the Construction Documents salvage materials, equipment, furnishings and specify protection, storage, re-installation, or delivery as directed by the Project Manager.
- Coordinate demolition sequence and Schedule with the Project Manager.

The Project Manager's role is to:

- Coordinate, when requested, demolition Schedule with DISD.
- Determine with DISD what items shall be re-used, stored or relocated.
- Advise the Architect/Engineer regarding removal, protection, storage or reinstaliation of materials and equipment.

The DISD's role is to:

- Determine with the Project Manager what items shall be re-used, stored or relocated.
- Review and approve the demolition Schedule.
- Receive and store or utilize salvage materials from demolition operations.

### 3.10 Governmental Regulatory Agency Review

The Project shall be designed and constructed in accordance with applicable laws, codes and ordinances.

The Architect/Engineer's role is to:

- Assist DISD in meeting regulatory requirements for design and construction.
- At the beginning of the Project, assisted by his design Consultants, identify all applicable regulations and compile a list of:
  - Regulatory agencies
  - Publications, codes, ordinances, regulations, laws, statutes or rules by applicable date.
- Develop the Design in accordance with applicable codes.

## 4.0 DESIGN PHASE

### 4.1 Procedures Applicable To All Design Phases

#### 4.1.1 Architect/Engineer's Quality Assurance Program

Design Quality Assurance shall be defined as conformance to the Project Requirements, professional Design standards and applicable codes. The Design Quality Assurance program shall define the procedures required to document and evaluate construction materials for conformance to the Design intent and industry standards.

The Design Quality Assurance program shall be based upon the following:

- DISD Design standards
- DISD Guidelines and Procedures
- Applicable government codes, laws, regulations and ordinances
- Governmental agency reviews
- Internal review and audits
- Project Budget, Schedule, Facilities Program Requirements.

The DISD's role is to:

- Review and approve the Architect/Engineer's Quality Assurance program.
- Cooperate with the Architect/Engineer's program by providing timely input, decisions and direction.

The Project Manager's role is to:

- Review and recommend the Architect/Engineer's Quality Assurance program to DISD.
- Monitor and report the Quality Assurance program compliance to DISD.
- Recommend the Quality Assurance program improvements and corrections to the Architect/Engineer.

The Architect/Engineer's role is to:

- Prepare and present the Architect/Engineer's Quality Assurance program for the Design and Construction Document phases.
- Organize the Quality Assurance program into the following categories:
    - Planning: A plan for the firm to deliver quality professional services.
    - Organization: Determine and structure tasks which will accomplish the Design and deliverables objective.
    - Staff: Selection, training and supervision of Project personnel.
    - Direction: Management to direct the performance of tasks to achieve the quality objectives.
    - Control: Monitor to assure that the actual results are consistent with the planned results.

- Hold in-house reviews to include the Project Manager and Consultants:
  - Select an experienced, qualified committee or individual not involved on the project to periodically review and critique the project with the Project Manager.
  - Critique schematic studies against DISD requirements outlined in the facilities program.
  - Document schematic studies review comments and return to the Design team with recommendations for additional work.
  - After acceptable modifications, request the Project Manager to establish a presentation date/time with DISD for Design studies as well as a final Design Review.

### 4.1.2 Design Calculations and Criteria

The DISD's role is to:

- Request, at its option for review, Design calculations and criteria.

The Architect/Engineer's role is to:

- Legibly and logically prepare, maintain and submit to DISD, if requested, reproduced copies of Design calculations and criteria for all elements, components, and systems of the project.
- As a minimum, collect copies of all Design calculations and criteria at the end of the Design phase and transmit to the Project Manager for DISD record files.

### 4.1.3 Confirmation of Scope, Construction Cost and Schedule

The Project Manager's role is to:

- Review the completed Design Documents, including the drawings, specifications, construction cost, and time estimates provided by the Architect/Engineer.

The Architect/Engineer's role is to:

- Review the Design Documents with the required governmental agencies prior to the DISD presentation.
- Confirm that the Design Documents fulfill the project:
  - Scope of work requirements
  - Budget
  - Construction time

### 4.1.4 Public Utility Coordination

The Architect/Engineer's role is to:

- Determine and identify, with the assistance of DISD and the Project Manager, all project related, existing and required on-site utilities.
- Participate in meetings and correspond with utility companies representatives.
- Project awareness and DISD requirements, scope of service required and Schedules for those services.
- Provide the availability of utility services at the Project site.
- Coordinate the service and connection requirements by the utility company
- Determine the cost to DISD to provide utilities to the site including connection fees.
- Coordinate the hook-up requirements and Schedules for turn-on and turn-off.
- Provide other special Project utility needs required by the specific scope of work.

- Incorporate into the Design all utility information necessary for construction and to satisfy the utility company's requirements.

The Project Manager's role is to:

- Inform DISD of all utility requirements, status and progress in the Project Status Reports or correspondence.

## 4.2 Procedures Applicable to Schematic Design and Design Development

### 4.2.1 Presentation for DISD Board Approval

The Architect/Engineer and the Project Manager may be asked a variety of questions during presentations to the Board or as required by DISD.

The Project Manager's role is to:

- Confirm with DISD Division Executive, Facilities Bond Program:
  - Presentation time, date, place and other requirements.
  - Materials to be presented, order of presentation.
  - DISD representatives attending the presentation.
  - Architect/Engineer and Consultants required to attend.
  - Visual aids and equipment required.
- Have knowledge of pertinent facts, alternates, options and all materials to be presented such as DISD concerns, Cost Estimates, and Construction Schedule.
- Respond in writing to all comments and inquiries by DISD.
- Recommend the Design in writing to DISD with respect to the following areas of Design critique:
  - Adherence to the Facilities Program
  - Compliance with the Educational Specification requirements
  - DISD Guidelines and Design standards
  - Constructability
  - Construction cost and time of construction
  - Clarity, coordination, consistency and completeness of the Design Documents
- Coordinate and expedite activities and efforts of the Architect/Engineer to bring the Design in line with the budgeted construction cost, including re-Design.
- Assist DISD and the Architect/Engineer in DISD reviews and presentations.

The Architect/Engineer's role is to:

- Furnish all materials necessary for Design presentations.
- Produce the following materials for the formal Design review presentation at the completion of Schematic Design phase:
  - Site plan noting existing site conditions, surrounding community existing buildings and particular site features.
  - Plot plan of the preferred schemes showing proposed building mass, circulation improvements, and the property to be acquired, if required - scale 1"=20'-0."
  - Brief description of the Design approach and the proposed Design solutions.
  - Schematic building floor plans.
  - Exterior elevations and/or perspective drawings.
  - Other pertinent data, as required by site conditions or building program, to aid presentation clarity.
  - Design Estimates of construction cost and time to construct the project.

- Mount presentation materials on boards and color to illustrate the following areas:
  - New Buildings
  - Demolished or Relocated Buildings
  - Designated Playgrounds
  - Parking
  - Traffic Circulation for pedestrian and vehicular
- Be prepared to address the following topics, when and if applicable, during the Design presentation:
  - Have knowledge of the facilities program.
  - Prepare to discuss the timetable or Schedule for completing various architectural and construction milestones, including any phasing requirements.
  - State who has reviewed and approved the Design to date.
  - Prepare to describe the school location by cross streets and existing acreage.
  - Provide a general description of the Project by indicating the number of square feet, new site or addition to existing school.
  - Prepare to state the provisions for special classrooms or programs.
  - Indicate the routes children who walk to school generally follow and how they will get onto the playground before school starts.
  - Indicate how the children will be protected from construction activities on existing campuses.
  - Describe site considerations such as the playground area, landscaping and parking.
  - Indicate the location of existing items to be relocated and other buildings, and note whether they will be moved or eliminated as a result of the Project.
  - Indicate where the trash pickup area is located as well as public view, access for large vehicles, noise or odor problems.
  - Indicate how the buildings and parking will make the most efficient use of the site.
  - Clearly state any Facility Design problems.
  - Describe the Design approach to solve specific problems.
  - State how the Design will integrate with the existing school, neighborhood, existing vehicular and pedestrian traffic patterns.
  - State what and how significant characteristics of the site will impact the building. Design, character and scale of neighborhood architecture, size of site, ethnicity of neighborhood, etc.
  - Prepare a "Walk through" of the proposed Facility describing the building program, the various spaces, their size and the important spatial areas.
  - Indicate how the building Design is efficient and does not use up excessive square footage on circulation.
  - Describe other proposed Design features such as roof type, and focal point of the Project.
  - Describe how displacement of students will be provided for during renovation projects.
  - Portable building location and provisions.

### 4.2.2 Design Schedule Verification

The DISD's role is to:

- Review and approve requested time extensions in the Design Schedule only upon written request by the Architect/Engineer and the written recommendation by the Project Manager stating that the change is in compliance with the DISD approved project Schedule.
- Schedule DISD Document reviews and presentations for approval in compliance with the Design Schedule.

The Project Manager's role is to:

- Verify that all Design activities and documentation progress is in compliance with the Design Schedule.
- Report to DISD, in writing, any significant problems associated with Design progress and make recommendations for corrections or improvements.
- Review and recommend to DISD any Architect/Engineer requests for time extensions.

The Architect/Engineer's role is to:

- Perform Design Documents activities and documentation in compliance with the Design Schedule.
- Request any required time extensions in the Design Documents phase in writing with justifications to DISD through the Project Manager.

### 4.2.3 DISD Presentations

The DISD Design Review Committee shall be designated by DISD for each presentation.

The function of the Committee shall be to review and recommend, when required, school designs to the DISD Board of Education.

Formal presentations shall be required for Schematic Design and Design Development drawings. Additional Review Committee presentations may be required:

- At the Request of the Review Committee in order to resolve an issue or correct a problem, or for additional information.
- In the event the Project scope is changed after Design submittal approval.
- Of other requirements for review by DISD.

All boards, models, materials, etc. including the handouts shall be reviewed by DISD prior to the formal presentation.

In addition, there will be a design presentation to the DISD Board and/or Representatives of the Board.

#### 4.2.3.1 General

The DISD's role is to:

- Conduct all Design reviews.
- Issue written approval and acceptance of each Design phase and authorize the Architect/Engineer to proceed on to the Construction Document phase.

The Project Manager's role is to:

- Attend all DISD presentations relating to his assigned Projects.
- Review all materials of the formal submittal prior to the presentation.
- Take meeting minutes and distribute to attendees.
- Write letter to DISD at the time of submittal, recommending Document acceptance based on review and completeness.

The Architect/Engineer's role is to:

- Provide all materials and equipment required for the DISD presentations.
- Document the review comments and incorporate the required items into the Design Documents.

#### 4.2.3.2 Scheduling

The DISD's role is to:

- Establish presentation dates and confirm all materials required for the presentation with the Project Manager.

The Project Manager's role is to:

- Confirm with DISD:
  - Presentation time, date, place and DISD special requirements for each presentation
  - Materials to be presented
  - DISD representatives attending the presentation
  - Architect/Engineer and Consultants required to attend
  - Visual aids and equipment required
- Have knowledge of pertinent facts, alternates, options and all materials to be presented such as Cost Estimates and Schedules.
  - Respond in writing to all comments and inquiries by DISD.

The Architect/Engineer's role is to:

- Furnish all materials necessary for Design presentations.

#### 4.2.3.3 Presentations

The DISD's role is to:

- Determine when Documents are required to be presented to a review committee, a Board committee or the full Board, and advise the Project Manager of the time and place.
- Review and approve the Design Documents, and estimates for construction cost and time.
- After Board approval, issue written approval and acceptance of the Design phase and authorize the Architect/Engineer to proceed on to the Construction Documents phase.

### 4.3 Schematic Design Overview

The Schematic Design Phase is the effort to confirm the DISD requirements for the projects, and to graphically satisfy these requirements so that DISD and the Project Manager clearly understand and approve the design solution.

The DISD's role is to:

- Review the Schematic Design conceptual schemes and final Schematic Design presentation.
- Provide Schematic Design approval with qualifying comments.
- Issue project Scope, Budget and Schedule changes.
- Provide list of DISD approved furniture fixtures and equipment.
- Consult with Architect/Engineer regarding: Schematic Design requirements, contemplated Schematic objectives, constraints and criteria including space requirements and relationships, flexibility, expansion, special system and site requirements.
- Provide consultant services reasonably required by the project scope of work, when requested by Architect/Engineer, providing they are not included in the DISD and Architect/Engineer Agreement for services.
- Provide reasonable site access to the Project Manager and Architect/Engineer.
- Establish a Board agenda item to present the Schematic Design for approval.
- Participating in the board meeting as required to support the Design presentation by the Architect/Engineer.

The Project Manager's role is to:

- Orient the Architect/Engineer to the project goals, objectives and procedures for Schematic Design phase as outlined in the orientation meeting section 3.2.
- Meet with the Design team to:
  - Review progress.
  - Provide input to the Design regarding Schedule, compliance to program requirements and Budget.
  - Receive Architect/Engineer requests and questions for DISD.
  - Convey DISD decisions and directions to the Architect/Engineer.
  - Arrange for DISD Design review meetings and board presentations.
  - Provide Schematic Design recommendations to DISD.

The Architect/Engineer's role is to:

- Review DISD facility program requirements
- Prepare written project program based on DISD's preliminary program.
- Prepare Schematic Design studies.
- Drawings and models to define concept

| | Minimum Scale |
|---|---|
| • Site Plan: | 1"=30'-0" |
| • Floor Plans: | 1/8"=1'-0" |
| • Exterior Elevations: | 1/8"=1'-0" |
| • Typical Sections: | 1/8"=1'-0" |

- Prepare a general project description narrative.
- Hold a project review with the Project Manager, the Architect/Engineer's and DISD's Consultants.
- Determine manpower and Consultant requirements for Schematic Design phase.
- Assign, manage, and coordinate the project Design team.
- Revise Design Documents per DISD comments and/or additional requirements.
- Review Design Budget and time Schedule for Contract Documents with the Project Manager.
- Prepare probable project cost utilizing CSI format detail breakdown.
- Secure DISD's written approval of the Schematic Design and authorization to proceed with the Design Development.

- Comply with the following minimum additional requirements for Schematic Design for projects involving alterations and additions to existing facilities:
  - Review available existing drawings, specification, manufacturer's data, maintenance records, etc., and compare with observable on-site conditions as required to become knowledgeable and familiar with existing conditions.
  - Provide necessary on-site investigations, measurements, and documentation of existing facilities or site conditions related to the new work.
  - Include in the design analysis narrative an evaluation of the suitability for reuse of major existing materials, systems, and equipment in comparison of the alternatives of demolition, removal and replacement.
  - Include in analysis narrative an opinion of the extent to which existing facilities must be brought into compliance with current codes and regulations.
  - Identify in a general narrative description, special repair or restoration procedures required for existing materials and systems to remain as determined by DISD.

### 4.3.1 Existing Conditions

The DISD's role is to:

- Provide all existing available information for use by the Architect/Engineer to Design the project. If the following information does not exist or is not available, DISD shall obtain the information through the Project Manager, the Architect/Engineer, DISD Consultants or other sources.
- Provide site legal descriptions and limitations
- Provide site surveys with benchmark locating boundaries, existing grades, easements, existing buildings and site surface amenities, streets, alleys, pavements, adjoining property, adjacent drainage, rights-of-ways, restrictions, zoning, encroachments, deed restrictions, and trees.
- Provide the services of Geotechnical Engineers, when requested by the Architect/Engineer, including:
  - Test borings
  - Test pits
  - Soil bearing values
  - Percolation test
  - Evaluation of hazardous materials
  - Ground corrosion
  - Resistivity test
  - Necessary operations for anticipating subsoil conditions
  - Reports including test results
  - Professional recommendations

The Project Manager's role is to:

- Review the Architect/Engineer's request for information and Consultants and convey to DISD with a recommendation.
- Assist DISD in obtaining Consultant services for information when requested by DISD.
- Forward the information to the Architect/Engineer.
- Coordinate the activities of the Architect/Engineer with the activities of other DISD consultants by:
  - Assuring DISD Consultants are on-board when needed.
  - Provide timely meetings and information flow.

- Confirm DISD Consultants and others are performing services in a timely manner and in accordance with their contracts.
- Confirm that the Architect/Engineer, DISD Consultants and others are providing timely input to each other in accordance with the project schedule.
- Coordinate any required adjustments to the performance of services by the Architect/Engineer, DISD Consultants, or others.
- Coordinate DISD's Consultant services with the Architect/Engineer.

The Architect/Engineer's role is to:

- Review the existing conditions, DISD facilities program, DISD provided information to determine additional information required and special Consultants needed beyond the scope of the Architect/Engineer's contractual services.
- Request the information or DISD provided Consultant services.

### 4.3.2 Project Design Meetings

These meetings shall serve as forums and work sessions to discuss and decide Design and documentation related issues with representatives of DISD or with DISD through the Project Manager.

The DISD's role is to:

- At its option, attend Design review meetings except:
  - Review Design when requested by the Architect/Engineer and recommended by the Project Manager.
  - Review completed Schematic Design when requested by the Architect/Engineer and recommended by the Project Manager.

The Project Manager's role is to:

- Conduct required Design meetings, attended by the Architect/Engineer, others and DISD at it's option.
- The meeting agendas shall include when appropriate:
  - An exchange of information concerning the project.
  - Review of Design progress
  - Comparison of Design progress to the project Schedule
  - Project scope change request
  - Request for DISD input or decisions/approvals
  - DISD input, decisions and approval
  - Architect/Engineer or Project Manager request for information
  - Comparison of Design Documents with DISD facilities program requirements and the project Scope of Work.
- Review the Schematic Design Documents for clarity, consistency and completeness.
- Review any cost considerations.
- Submit the results of the review with recommendations in writing to DISD.
- Note review comments on Schematic Design Documents and forward to the Architect/Engineer for implementation.
- Provide confirmation of the Architect/Engineer construction cost estimate for each Design phase.
- Compare the Architect/Engineer's progress against the Design Schedule on an incremental basis and report to DISD in the monthly reports.
- Advise DISD regarding major Design related issues, problems and recommend corrective actions.
- Review the Architect/Engineer's conceptual design and recommend DISD review.

- Recommend to DISD that Schematic Design is complete and ready for DISD review and approval.

The Architect/Engineer's role is to:

- Attend and participate in meetings conducted by the Project Manager for the purpose of coordinating and reviewing Design progress Documents and other related material and issues.
- Prepare appropriate Design information, data, drawings, cost estimates, models, descriptions and other materials for review, discussion, critique, coordination and approval at the project Design meetings.
- Make revisions and Design adjustments to comply with decisions resulting from the meetings.

### 4.3.3 Schematic Design Documentation

The DISD's role is to:

- Review and approve the Schematic Design Documents and provide qualifying comments when appropriate.

The Project Manager's role is to:

- Review the Documents during development and at completion for the following:
  - Compliance with the DISD facilities program
  - Compliance with the project construction Budget
  - Compliance with the construction Schedule
  - Economy of Design
  - Constructability
  - Completeness and coordination
- Recommend the final Design Documents to DISD.

The Architect/Engineer's role is to:

- Prepare a descriptive narrative summary describing the Design approach to the DISD Facilities Program requirements including as a minimum:
  - Design concept and philosophy emphasizing function, form and economy
  - School and educational issues
  - Constraints and limitations
  - Code issues
  - Neighborhood or existing facility influences/ethnicity.
  - Environmental issues
  - Budget impact on the Design
  - Construction Schedule impact, if any
  - Site constraints and features
- Prepare with the Consultants Schematic Design Documents to illustrate the scale and relationship of project components. Schematic Drawings shall include, as a minimum, the following:
- Site Plan, scale 1"=30"-0" min., illustrating
  - Building/structure location
  - Parking, play grounds and other site amenities
  - Major circulation elements
  - Utility locations pertinent to Design
  - Adjacent areas
  - Major grade changes
- Floor Plans, scale: 1/8"=1'-0" min., illustrating:

- New work at all levels of new or existing/remodeled buildings
- Exterior elevations, scale 1/8"=1'-0" min., illustrating:
  - Materials
  - Vertical dimensions/elevations
  - Relationships, proportions and scale of vertical elements
- Wall sections and/or sketch details as required to indicate special design considerations
- Schematic structural foundation and framing plans
- Schematic HVAC under floor, floor, and roof plans, indicating proposed major equipment locations and single-line duct routes and pipe routes
- Schematic plumbing under floor, floor, and roof plans indicating proposed major plumbing and fire protection related equipment locations
- Schematic electrical under floor, floor, and roof plans indicating proposed major equipment locations, typical lighting systems, and special systems space allocations
- Design analysis, written narrative and sketches as required, including the following:
  - Design rationale
  - Code analysis indicating proposed construction type and occupancy classification and requirements thereof including barrier-free considerations for the handicapped
  - Structural analysis including:
    Foundations and framing system options
    Design loads
    Special considerations
  - Mechanical descriptions of the proposed systems including a schematic diagram of air flow through the various system components.
  - Narrative description of the proposed systems including a schematic diagram of air flow through the various system components
  - Plumbing analysis including:
  - Narrative description of the proposed systems including a schematic diagram of piping risers through the various system components
  - Electrical analysis including:
  - A descriptive narrative of proposed electrical systems. This narrative would include the results of consideration of alternative systems.
  - Schematic Design load analysis
  - Space summary indicating:
  - Comparison to program
  - Net/gross ratios
  - Written narrative describing materials, equipment and systems, by all disciplines
  - Cost estimate by all disciplines, in CSI Major Divisions format.
  - Schematic phase Document submittal shall consist of 6 sets of the following:
    - Bound sets of reproductions of schematic drawings (reduced from full-size if required)
    - Bound sets of Design analysis (8-1/2" x 11").
    - Schematic Design shall be presented to DISD Board, making use of the following media:
    - Full-size reproductions of schematic drawings mounted on rigid boards or, at the Architect's option, projected reproductions of schematic drawings and/or scale models cost, area takeoffs, etc

### 4.3.4 Schematic Design Construction Cost and Time Estimates

The DISD's role is to:

- Provide a project construction cost Budget.
- Review and approve the Architect/Engineer's Schematic Design construction cost estimate providing the estimate is within the Budget.

The Project Manager's role is to:

- Review the Schematic Design Documents in comparison to the Architect/Engineer's construction cost estimates and estimate time to construct the project at the end of the phase as follows:
  - Confirm CSI format is used
  - Review quantity take-offs
  - Check math of estimate
  - Confirm tax has been excluded
  - Verify amounts are compatible with current local prices
  - Confirm all costs are included, based on Design Documents
  - Compare to previous estimates, if any
  - Compare to project Budget
- Review and verify that the Architect/Engineer's estimate of time to construct the project is realistic and achievable based on the following:
  - Size, scope, difficulty, and complexity of constructing the project
  - DISD time factors of Board approvals, on-going school operations, asbestos removal, DISD consultant response, site accessibility for construction.
  - Time of year, weather
  - Utility availability
  - Potential labor problems and availability
- Recommend the Architect/Engineer's construction cost and time estimates to DISD

The Architect/Engineer's role is to:

- Prepare a Schematic Design estimate of probable construction cost of the project as an aggregate sum of major project components using the Construction Specification Institute (CSI Divisions) format, with a detailed unit breakdown of quantities.
- Prepare a statement of probable time to construct the project identifying all considerations used in developing the time line.

### 4.3.5 DISD Schematic Design Approval Comments

The DISD's role is to:

- Issue written approval and acceptance of the Schematic Design phase and authorize the Architect/Engineer to proceed on to the Design Development phase.
- Provide qualifying comments at Schematic Design approval for Design deficiencies, scope changes and other DISD requirements.
- Forward the comments to the Project Manager and Architect/Engineer with the authorization to proceed.

The Project Manager's role is to:

- Review the DISD qualifying comments and monitor the Architect/Engineer's implementation into the Design Development Documents.
- Review and recommend to DISD, and Architect/Engineer exceptions to the comments or recommendations regarding cost, Schedule or other considerations.

The Architect/Engineer's role is to:

- Review DISD's qualifying comments for impact to cost, Schedule, and other implications to Design.
- Make appropriate written recommendations to DISD through the Project Manager.
- Implement DISD approval comments into the Design Development Documents.

### 4.3.6 DISD Provided Furnishings, Fixtures and Equipment

The DISD's role is to:

- Determine what Project furniture and equipment shall be provided by DISD and inform the Architect/Engineer.
- Verify that provisions in Design and Construction Documents are made by the Architect/Engineer for DISD provided furniture and equipment.

The Architect/Engineer's role is to:

- Make provisions in the Design and Construction Documents for DISD provided furniture and equipment to include:
  - Space requirements for area, headroom
  - Hook-up to utilities
  - Compatibility with existing systems, furniture, equipment and application
  - Identify which equipment needs to be installed prior to Final Completion.

The Project Manager's role is to:

- Confirm that the Facility construction conditions are incorporated into the documents for the DISD provided furniture and equipment:
  - Area security
  - Area protection from fire, theft, and water damage
  - Air conditioning environmental control

## 4.4 Design Development

The DISD's role is to:

- Provide Continuing Activities listed in Section 2 of this Manual during the Design Development phase.
- Attend Design Development review meetings as an option.
- Provide additional information and decision input as required by the Architect/Engineer and Project Manager
- Review, approve and provide qualifying comments regarding the final Design Development Documents.
- Prepare a Board Agenda item for presentation of the Design Development Documents.

The Project Manager's role is to:

- Provide Continuing Activities listed in Section 2 of this Manual during the Design Development phase
- Conduct Design Development review meetings, document, and distribute minutes
- Coordinate DISD Consultant services
- Review Architect/Engineer requests for information, DISD decisions, and DISD Consultant services, convey to DISD with recommendations, respond to the Architect/Engineer as directed by DISD.
- Monitor regulatory agency reviews.

- Review Design Development documentation, construction cost, and time estimates.
- Make recommendations to the Architect/Engineer and DISD.
- Assist in DISD presentations.

The Architect/Engineer's role is to:

- Provide Continuing Activities listed in Section 2 of this Manual during the Design Development phase.
- Upon receipt of written authorization by DISD to proceed with Design Development, perform material and system calculations, Design studies, investigations, estimates, evaluations and documentation based on the DISD approved Schematic Design Documents and any scope changes and required Schematic Design modifications of drawings, outline specifications, structural and MEP Design criteria and calculations, construction cost estimates and estimated time required for construction.
- Request additional data from the Project Manager if necessary.
- Compile a proposed building components and systems checklist and submit the list to the Project Manager for DISD approval.
- Attend and participate in Design review and coordination meetings.
- Perform code reviews.
- Prepare Design Development Documents.
- Present the Design Developments to DISD for approval.

### 4.4.1 Code Compliance Confirmation

The DISD's role is to:

- Require that final Design Development Documents meet all governing codes, ordinances, laws, rules and regulations.
- Require that the Architect/Engineer provide written verification that Documents are being reviewed by all regulatory agencies having jurisdiction over the project.
- Approve an application for code variance when due to extreme conditions or circumstances, or when due to a significant advantage to DISD.

The Project Manager's role is to:

- Confirm regulatory agency reviews of the Design Development Documents and report potential problem areas to DISD. State status of agency reviews in recommendation for approval at the end of the Design phase.
- Assist DISD and the Architect/Engineer with applications for code variances when approved by DISD.

The Architect/Engineer's role is to:

- Review preliminary code assumptions and Design Development Documents with appropriate regulatory officials for interpretation of code application to the Design and determine Design requirements for compliance.
- Revise the Documents to comply with any code deficiencies as determined by regulatory agency review.
- Report in writing to DISD and the Project Manager any code deficiencies that impact project Budget, Schedule, Design Documents or require code variance. A code variance will by considered by DISD only under extreme circumstances or significant advantage to DISD.
- Provide written verification to DISD with final Design Development submittal that the Documents are in compliance with all applicable codes.

### 4.4.2 Design Development Documentation

The DISD's role is to:

- Require that all Design Development Documentation be in the same format and scale as the Construction Documents described herein.
- Review and consider for approval any changes requested or deviation from the following documentation requirements when submitted in writing by the Architect/Engineer and recommended in writing by the Project Manager.
- Provide qualifying comments to be incorporated into the Construction Documents.

The Project Manager's role is to:

- Review the Design Development Documents for the following:
  - Constructability, compliance with DISD, Design Standards and these Guidelines.
  - Coordination and completeness
  - Economy of Design.
  - Compliance with the Design parameters of the DISD approved Schematic Design Documents.
  - Coordination with code and utilities requirements.
  - Compliance with recommendations and input by DISD, the Project Manager and Consultants.
- Recommend acceptance of the completed Documents to DISD.

The Architect/Engineer's role is to:

- Prepare Design Development Documents based on the DISD approved Schedule Design Documents. The Design Development Documents shall consist of drawings, specifications and other material required to fix, describe and define the project. Design Development Documents shall include, as a minimum, the following:
  - Architectural site plan (1"=30' or larger) illustrating the following:
    - Site demolition
    - Location, outline, and designation of new and existing buildings
    - Site amenities and landscaped features
    - Contours showing existing and finished grades
    - Building dimensions and site location
    - Utility locations, both new and existing
  - Dimensioned floor plans and demolition plans, 1/8"=1'-0" min., illustrating:
    - Demolition
    - Finished floor elevation
    - Definition of spaces by walls and partitions shown to scale, by name and number
    - Openings (doors, windows, etc.)
    - Definition of stairs, elevators, escalators
    - Furniture, fixtures and equipment including built-ins
    - Barrier free requirements for the handicapped
    - Complete Room Finish Schedule
  - Reflected ceiling plans indicating ceiling grid, lights, HVAC outlets, ceiling access, furr downs
  - Exterior elevations (1/8"=1'-0" min.) illustrating:
    - Principle views of the exterior of the building
    - Exterior material identifications
    - Major vertical dimensions of:
      - Finish floor lines and roof line
      - Parapet heights

    - Height of vertical elements including penthouses, roof top equipment, site walls, equipment screens
  - All vertical and horizontal elements drawn to scale
  - Interior elevations, 1/4"=1'-0" min., should be of typical and non typical walls and wall treatments, case and cabinet work, educational equipment such as chalkboards, tack boards, equipment mounting heights, wainscots, ceiling furr downs, etc
- Building sections (1/8"=1'-0" min.) through major vertical elements including:
  - Minimum of one transverse and one longitudinal (per structure)
  - Indication of special conditions of structure and major HVAC elements
  - Major vertical dimensions
  - Delineation of ceilings and structural systems and major HVAC elements
  - Roof mounted equipment and other features such as parapets and penthouses
- Wall sections (1/2"=1'-0" min.) illustrating
  - Vertical dimensions
  - Materials used in wall assemblies
  - Provide sections at major varying conditions and transitions
- Details (scale as appropriate) as required to define and illustrate Design elements and compatibility of work by all disciplines
- Structural drawings consisting of:
  - Foundation plans (1/8"=1'-0")
  - Framing plans (1/8"=1'-0")
  - Sections and details (scale as appropriate) as required to define typical and special structural elements and conditions
  - Schedules and criteria
- Design Analysis (written narrative/sketches as required) including the following:
  - Outline finishes
  - Code analysis addressing areas of non-compliance. Prepare a written summary of preliminary review by local code authority noting date of occurrence and comments derived therefrom
  - Outline specifications
  - Structural analysis indicating calculations and explanation of selected structural system
  - Update of Schedules
  - Cost estimate
- Submit Design Development Documents in 6 sets containing the following:
  - Bound sets of full sized blue-line reproductions of Design Development drawings.
  - Bound sets of 8 1/2" x 11" data
- Provide minimum additional requirements for Design Development Documents for projects involving alterations and additions to existing facilities:
  - Visit site and document existing representative detail conditions
  - Obtain photographs and/or measured drawings of critical existing detail conditions
  - Document representative structural dimensions critical to detail coordination and clearances
  - Document actual existing vertical and horizontal clearances where additions and alterations of MEP systems are required within existing spaces
  - Suggest appropriate investigative demolition where critical dimensions cannot be determined by examination of surface conditions
- Recommend appropriate substrata investigations where performance of selected finish is dependent upon compatibility and soundness of an existing substrata

- Use the following Drafting/Delineation standards for Design Development Documents and format:
  - Construction drawings shall be on double matte mylar (or equal) plastic drafting sheets. The sheets shall be a minimum of 4 mil. thick and 30" high by 42" wide. Design Development drawings shall be on the same sheet size and have the same format criteria as the final construction drawings. Drawing media for Design Development drawings is at the discretion of the Architect/Engineer
  - Final construction drawings submittal shall be done using plastic lead or ink.
  - Design Document Drawings may be drawn on the sheets to be used for final construction drawings at the Architect/Engineer's option
  - Sheet format: Drawing borders shall be 1/2" away from the edge of sheet on the top, right, and bottom of each sheet. A binding edge of 1-1/2" shall be allowed on the left side of each sheet. A title block shall indicate the following:
    - Specific campus and site address
    - Project title
    - Space for Architect seal complying with current State of Texas registration law
    - Space for Engineer seal complying with current State of Texas registration law
    - Prefix designating discipline, i.e. A-Architectural, S-Structural, etc.; A dash followed by the sequential sheet.
    - Date of submittal to DISD
    - Draftsperson (last name and first initial)
    - Checker (last name and first initial)
    - Architect's job number
    - Any other pertinent information required
  - Drafting quality: as required for clear and legible prints when the drawings are reduced to one-half size. Full-size numbers shall be used for all fractions (e.g. 2 3/8"). Mechanical lettering (Leroy or equal) shall not be less than 0.125. Typewritten notes and information shall be inserted using capital letters only.
  - Cover sheet: shall not be numbered nor have a title block. Only the following information shall appear on the cover sheet:
    - 1992 Bond Program
    - Dallas Independent School District
    - Board Members
    - General Superintendent
    - Name of Project/Project No.
    - Campus
    - Site Address
    - Date of submittal to DISD
    - Name and address of Project Manager, Architect/Engineer and names of prime Engineers, and other prime Consultants
  - Nomenclature: nomenclature and terms used on the drawings shall correspond to that used in the project manual (specifications).
  - Drawing Organization. The drawings shall be arranged in the following order:
  - Cover sheet
  - General information including abbreviations, symbols and code criteria
  - Site drawings
  - Architectural drawings
    - Plans
    - Schedules
    - Elevations

  - Sections
  - Details
- Structural drawings
  - Plans
  - Schedules
  - Sections
  - Details
- Mechanical (HVAC)
  - Equipment Schedules: Include Schedules for existing air handling units, fans, pumps, etc., that will require alteration of re-balancing
  - Demolition of existing HVAC works, if applicable
  - Floor plans showing equipment, piping and air distribution systems.
  - 1/4"=1'-0" enlarged floor plans and sections for mechanical rooms
  - Sections and details
  - Provide drawings that explain, coordinate and clarify areas of conflict with other work (such as, architectural, plumbing, electrical, structural)
- Plumbing
  - General notes, abbreviations, symbols
  - Equipment Schedules
  - Demolition of existing plumbing, if applicable.
  - Floor plans logically sequenced showing equipment, fixtures to 5'-0" beyond exterior face of building
  - 1/4"=1'0" floor plans of toilet rooms
  - Standard details and other necessary details
  - Plumbing isometrics
  - Riser diagrams
- Electrical
  - Symbols and abbreviations
  - Site plan, to include site electrical other than power mains, such as sight lighting
  - Lighting, power, and electrical systems floor plans, logically sequenced showing extent of electrical work to 5'-0" beyond face of building
  - Schedules
  - Demolition plans, if required, for each area
  - Riser diagrams
- Sheet numbering/referencing
- Sheets shall be numbered in sequence (not including cover sheet) with each sheet number preceded by a letter(s) designating discipline, i.e., A-Architectural, C-Civil, S-Structural.
- Drawings on sheets shall be numbered in sequence, upper left to lower right and top to bottom.
- Drawings shall be organized to provide a clear system of cross references between floor plans, Schedules, elevations, sections and details. All sections shall be referenced to a floor plan and an elevation. All details shall be referenced to either a floor plan, elevation or section. Minor details shall be referenced to major details or section.
- Room numbers and names as shown on architectural HVAC, plumbing and electrical plans in halftone. Column lines or designations shall be shown on architectural and engineering plans.
- Details shall be identified by name and detail number using 1/4" high lettering (minimum). The detail number, located within a 3/4" diameter bubble, shall precede the detail title. Line weight shall be 0.9 mm. (#3). Drawing scale and

north arrow shall be indicated on all plans. Floor plan title shall be located below each floor plan and shall conform with the requirements for titles.

- Sheets issued with addenda shall by 8 1/2" x 11", or the same size as those of the construction drawings, numbered in sequence with the prefix "AD" and including descriptive data in the title block.
- Mechanical, Plumbing, Electrical Standard Symbols
- A standard symbols and abbreviations Schedule/sheet will be issued by the Architect/Engineer. This Schedule will contain all the standard symbols normally used on the drawings. The symbols and abbreviations sheet shall be issued as a separate drawing with each project and shall be a part of the Contract Documents.

### 4.4.3 Design Development Construction Cost and Time Estimate

The DISD's role is to:

- Provide a project construction cost Budget.
- Review and approve the Architect/Engineer's Design Development construction cost estimate.

The Project Manager's role is to:

- Review the Design Documents in comparison to the Architect/Engineer's construction cost estimates and estimate time to construct the project at the end of the phase as follows:
  - Confirm CSI format is used
  - Review quantity take-offs
  - Check math of estimate
  - Confirm tax has been excluded
  - Verify amounts are compatible with current local prices
  - Confirm all costs are included, based on Design Documents
  - Compare to previous estimates, if any
  - Compare to project Budget
- Review and verify that the Architect/Engineer's estimate of time to construct the project is realistic and achievable based on the following:
  - Size, scope and difficulty and complexity of constructing the project
  - DISD time factors of Board approvals, on-going school operations, asbestos removal, DISD consultant response, site accessibility
  - Long lead and specialty items delivery
  - Construction sequencing
  - Time of year, weather
  - Utility availability
  - Potential labor problems and availability of local labor
- Recommend the Architect/Engineer's construction cost and time estimate to DISD

The Architect/Engineer's role is to:

- Prepare a Design Development estimate of probable construction cost of the project as an aggregate sum of major project components using the Construction Specification Institute (CSI Divisions) format, with unit quantities and detail unit costs.
- Provide a confirmation of proposed time for construction.

### 4.4.4 Review Meetings

The DISD's role is to:

- Attend, as an option, periodic progress Design Development reviews with the Architect/Engineer and the Project Manager.
- Make timely decisions on issues resulting from the meetings regarding the following Design Development considerations:
  - Use of materials, components, systems and equipment in the project Design
    - Bid packaging
    - Cost and Schedules
    - Progress of the work and other Design issues

The Project Manager's role is to:

- Conduct periodic biweekly progress Design Development reviews between DISD and the Architect/Engineer.
- Prepare and distribute minutes of the meetings to DISD, DISD Consultants, and the Architect/Engineer.
- Coordinate activities and services of DISD Consultants.
- Actively participate in the meetings to review the Design Documents and provide input on behalf of DISD as directed and required by DISD.
- Provide input for the following similar tasks performed during Schematic Design:
  - Construction cost and Schedules
  - Design recommendations
  - Design related information required from DISD

The Architect/Engineer's role is to:

- Attend and participate in the meetings as follows:
  - Provide appropriate Design materials and documentation for review and evaluation.
  - Provide timely request for DISD provided information and DISD Consultant services.
  - Review and reconcile construction cost estimates with the Project Manager.
- Review the following issues as appropriate:
  - Design compliance with applicable industry and DISD standards.
  - Compliance with applicable governing codes and ordinances.
  - Consistency with DISD Facilities Program requirements.
  - Coordinated integration of all building systems and components.
  - Cost/value in selection and use of all materials and systems.
  - Serviceability, maintenance, replacement cost, durability and service life of materials, equipment and systems.
  - Water/moisture penetration and control of building envelope, including sub-grade, grade, exterior walls and roof components.
  - Interior and exterior school environment.
  - DISD provided furnishings and equipment.
  - Local availability of materials and labor skills.
  - Security during construction/occupancy.
  - Provision for data communication systems.
  - Interior Design and furnishings.
  - Accessibility
  - Conformation of requirements with utility companies.
  - Identification of the presence of hazardous materials, such as asbestos, and the preparation of plans to mitigate or alleviate their interference with the Project.

- Document the review comments and incorporate the required items into the Design Documents.

### 4.5 Construction Documents

#### 4.5.1 Construction Drawings and Technical Specifications

The DISD's role is to:

- Review and approve construction drawings and specifications at the 60%, 95%, and 100% completion phase.

The Architect/Engineer's role is to:

- Prepare complete Construction Documents setting forth in detail the requirements for construction of the project. Construction Documents shall include, as a minimum, the following:
  - Cover sheet (per drafting/delineation standards)
  - General information sheet including the following:
    - A tabulation of "gross areas" and "net assignable areas:" by floor levels and total area for the project, as Design criteria of A/E Guidelines.
    - List of all drawings and their assigned sheet numbers
    - Area plan
    - Site relationship to surrounding area
    - Approved routes for delivery of materials to site
    - Extent of construction area, material storage areas, and Contractor's parking area
    - Structural Design criteria, including:
    - Floor and roof live loads
    - Dead load assumptions for ceilings and partitions
    - Design allowable stress in structural members
    - Design stress in truss members
    - Design soil bearing pressures
    - Wind Load
    - Additional pertinent structural Design conditions applicable to a specific project including future additions
    - Electrical Design criteria, including:
    - Transformer capacity
    - Primary voltage
    - Connected building load
    - Additional pertinent electrical Design conditions applicable to a specific project, including capacity or provisions for future electrical loads.
    - Mechanical Design criteria, including:
    - Type of system
    - Design conditions
    - Utilities from campus distribution systems including steam, heating water, chilled water, domestic hot water and compressed air
    - Total installed capacity of air conditioning in tons
    - Total installed capacity of heating in terms of BTU/Hr
    - Additional pertinent mechanical or plumbing Design conditions applicable to a specific project, including capacity or provisions for future mechanical and plumbing loads
    - General notes

- As required to clarify graphic conventions and establish uniform technical terminology between drawings and specifications. Do not duplicate information contained in specifications.
- Abbreviations, symbols, legends and graphic convention
- Reference symbols and explanations of reference systems
- Code review in format described herein

- Site work drawings
  - Owner-furnished survey
  - Architectural site plan
  - Landscape and irrigation plans
  - Civil site plan (if required)
  - MEP (Utility) site plan
- Architectural drawings
  - Demolition floor plans
  - Floor plans (new work may be combined with demolition)
  - Partition type identification
  - Smoke and fire compartmentalization
  - Fixed equipment/mill work/casework
  - Finished material delineation
  - Schedules (room finish/door/fixed equipment)
  - Demolition exterior elevations
  - Exterior elevations (new work may be combined with demolition)
  - Building sections
  - Interior elevations
  - Vertical transportation sections
  - Stairs/elevators/escalators
  - Wall sections
  - Details
  - Roofing
  - Special exterior
  - Plan section
  - Mill work
  - Roof plan
  - Reflected ceiling plan
  - Enlarged floor plans (as required - 1/4"=1'-0")
  - Furniture and equipment
  - Millwork
- Plumbing fixtures and specialties
- Structural Drawings
  - Foundation plan
  - Footing and foundation systems
  - Waterproofing details
  - Framing plans
  - Live load and dead load criteria tabulated for all areas
  - Schedules
  - Beams
  - Columns
  - Details
  - Connections
  - Reinforcing/bracing
  - Vibration isolation
- Mechanical Drawings

- Flow diagrams (as required)
- Floor plans
- Equipment
- Chilled, condenser, hot water, steam and condensation piping systems
- *Where piping systems are to be installed under floor, these shall be shown on an under floor plan and not on the plan prepared for the space above. Floor plans for mechanical systems shall be drawn to show pipes, ducts, etc. on the floor in which they are installed. In general, under floor plans shall be drawn to show all piping under floor and, from there up, the systems between each floor slab shall be shown only on the appropriate floor plan.*
- Roof plan
- Equipment
- Elevations/sections (as required)
- Enlarged plans
- All mechanical rooms
- Schedules
- Equipment
- Devices
- Details
- Equipment connections
- Supports/penetrations
- Other

- Plumbing Drawings (sanitary sewer, domestic hot and cold water, gas, fire protection water)
  - Under floor plan
  - *Where piping systems are to be installed below grade, these shall be shown on an under floor plan and not on the plan prepared for the space above.*
  - Floor plans
  - Roof plan
  - Riser diagrams
  - Waste and vent
  - Details
  - Schedules
  - Fixtures
  - Codes
- Fire Protection Drawings (may be included in plumbing if sprinklers are not required)
  - Floor plans
  - Details
  - Risers
- Electrical Drawings
  - Lighting floor plans
  - Fixtures
  - Switching
  - Circuiting
  - Power floor plans
  - Distribution equipment and feeders
  - Emergency equipment and feeders
  - Receptacles
  - Circuiting
  - Communications and security
  - Schedules

- Motor control
- Panel diagrams
- Devices/equipment
- Risers
- Details
- Grounding
- Special

- Assist the Project Manager in developing bid strategies to manage construction variables involved in extensive alterations to existing systems, equipment, and materials.
- Prepare and coordinate special bidding Documents as required for building renovations which may include:
  - Drawings and specifications describing specifically how bidders shall Schedule work in existing facilities to recognize academic Schedules and phasing requirements.
  - Drawings and specifications for obtaining unit price bids for anticipated construction variables where extent of work cannot be predetermined.
  - Preparation of sub-bidder pre-qualification criteria for specialized and critical renovation work.
- Submit 60% Pre-Final Construction Documents submittal in six sets containing the following:
  - Bound sets of full-sized reproductions of construction drawings
  - Bound sets of project manual
  - Updated cost estimate
  - Construction drawings considered incomplete by the Architect may be released for interim review without the architect's or engineer's seal or signature affixed.
- Submit Final 95% complete Construction Documents containing the following:
  - Architectural, civil, structural, mechanical, electrical and special construction drawings, CAD Documents required:
    - Site Plans
    - Civil Plans
    - All Floor Plans
    - Reflected Ceiling Plans
    - Roof Plans
    - Elevations
    - All MEP, HVAC plans
    - Room finish schedule
    - Fixture schedule
    - Equipment schedule
    - Panel Board schedule
  - Project manual including:
    - Technical specifications of A, C, S, M, E, and P and any special Documents required by the project scope such as landscaping
    - Bidding Documents
- Use the following Drafting/Delineation Standards for Construction Documents:
- Media, final construction drawings
  - Construction drawings shall be on double matte mylar (or equal) plastic drafting sheets. The sheets shall be a minimum of 4 mil. thick and 30" high by 42" wide. Design Development drawings shall be on the same sheet size and have the same format criteria as the final construction drawings.
  - Final construction drawings submittal shall be done using plastic lead or ink.

- Should media other than noted above be used on final original construction drawings, an archive quality film reproduction shall be made (at the expense of the Architect/Engineer) at the end of the Construction Development phase.
- Sheet format: Drawings borders shall be 1/2" away from the edge of sheet on the top, right, and bottom of each sheet. A binding edge of 1-1/2" shall be allowed on the left side of each sheet. A title block shall indicate the following:
  - Specific campus and site address
  - Project title
  - Architect (with space for seal complying with current State of Texas registration law)
  - Engineer (with space for seal complying with current State of Texas registration law)
  - Prefix designating discipline, i.e., A-Architectural, S-Structural, etc. and a dash followed by the sequential sheet
  - Date
  - Draftsperson (last name and first initial)
  - Checker (last name and first initial)
  - Architect's job number
  - Any other pertinent information required
- Drafting quality: as required for clear and legible prints when the drawings are reduced to one-half size. Full-size numbers shall be used for all fractions (e.g., 2 3/8"). Mechanical lettering (Leroy or equal) shall not be less than 0.125. Typewritten notes and information shall be inserted using capital letters only. Lower case text shall not be allowed.
- Cover sheet: shall not be numbered nor have a title block. Only the following information shall appear on the cover sheet:
  - 1992 Facilities Bond Program
  - Dallas Independent School District
  - Name of Project/Project Number
  - Campus
  - Site Address
  - Date
  - Name and address of the Project Manager, the Architect/Engineer and the names of the prime Engineers, and other prime Consultants
- Nomenclature: nomenclature and terms used on the drawings shall correspond to that used in the project manual (specifications).

- Drawing Organization. The drawings shall be arranged in the following order:
  - Cover sheet
  - General information including abbreviations, symbols and code criteria.
  - Site drawings
  - Architectural drawings
    - Plans
    - Schedules
    - Exterior elevations
    - Interior elevations
    - Sections
    - Details
  - Structural drawings
    - Plans
    - Schedules
    - Sections
    - Details

- Mechanical (HVAC)
  - Equipment Schedules: Include Schedules for existing air handling units, fans, pumps, etc., that will require alteration or re-balancing.
  - Demolition of existing HVAC works, if applicable.
  - Floor plans showing equipment, piping and air distribution systems.
  - 1/4"=1'-0" floor plans and sections for mechanical rooms
  - Standard details and other necessary details
  - Provide drawings that explain, coordinate and clarify areas of conflict with other work (such as architectural, plumbing, electrical, and structural).
- Plumbing
  - General notes, abbreviations, symbols
  - Equipment Schedules
  - Demolition of existing plumbing, if applicable.
  - Floor plans logically sequenced showing equipment and fixtures to 5'-0" beyond exterior face of building.
  - 1/4"=1'0" floor plans of toilet rooms
  - Standard details and other necessary details
  - Plumbing isometrics
  - Riser diagrams
- Electrical
  - Symbols and abbreviations
  - Site plan to include site electrical other than power mains, such as sight lighting.
  - Lighting, power, and electrical systems floor plans, logically sequenced showing extent of electrical work to 5'-0" beyond face of building.
  - Schedules
  - Demolition plans, if required, for each area
  - Riser diagrams
- Sheet numbering/referencing
  - Sheets shall be numbered in sequence (not including cover sheet) with each sheet number preceded by a letter(s) designating discipline, i.e., A-Architectural, C-Civil, S-Structural.
  - Drawings on sheets shall be numbered in sequence, upper left to lower right and top to bottom.
  - Drawings shall be organized to provide a clear system of cross references between floor plans, Schedules, elevations, sections and details. All sections shall be referenced to a floor plan and an elevation. All details shall be referenced to either a floor plan, elevation or section. Minor details shall be referenced to major details or section.
  - Room numbers and names as shown on architectural HVAC, plumbing and electrical plans in halftone. Column lines or designations shall be showed on architectural and engineering plans.
  - Details shall be identified by name and detail number using 1/4" high lettering (minimum). The detail number, located within a 3/4" diameter bubble, shall precede the detail title. Line weight shall be 0.9 mm. (#3). Drawing scale and north arrow shall be indicated on all plans. Floor plan title shall be located below each floor plan and shall conform with the requirements for titles.
  - Sheets issued with addenda shall be 8 1/2" x 11" or the same size as those of the construction drawings, numbered in sequence with the prefix "AD" and including descriptive data in title block.
- Mechanical, Plumbing, Electrical Standard Symbols

- A standard symbols and abbreviations Schedule/sheet will be issued by the Architect/Engineer. This Schedule will contain all the standard symbols normally used on the drawings. The symbols and abbreviations sheet shall be issued as a separate drawing with each project and shall be a part of the Contract Documents.
- Submit the Construction Documents to all governing regulatory agencies for review and comments.
- Correct all deficiencies and resubmit for approval and building permits prior to 95% final submittal to DISD.

### 4.5.2 Construction Staging/Protected Areas

The Architect/Engineer's role is to:

- Determine with DISD and the Project Manager which areas adjacent to the construction site shall be available for construction staging, site access, parking and equipment and materials storage.
- Identify and make provisions for these areas in the Construction Documents.
- Determine which areas of the site of the existing Facility require protection during construction through move-in including the following items:
  - Existing site equipment, trees, landscape, paving, curbs, gutters, utilities, fences, etc.
  - Continuing school operations and activities
  - Community and neighborhood property and activities
  - Construction areas

### 4.5.3 Final Design Calculations and Criteria

The DISD's role is to:

- Request, for review, the Design calculations and criteria as an option.

The Project Manager's role is to:

- Maintain a file copy of the Design calculations and criteria when a copy is requested by DISD.

The Architect/Engineer's role is to:

- Legibly and logically prepare, maintain and submit to DISD, if requested, reproduced copies of the Design calculations and criteria for all elements, components, and systems of the project.
- As a minimum, collect copies of all Design calculations and criteria at the end of the Design phase and transmit to the Project Manager for DISD record files.

### 4.5.4 Bid Alternates

Alternates shall be considered:

- To identify and isolate certain construction activities costs or equipment costs.
- To give flexibility in the Contract award to bring the job within Budget or allowance.
- To substitute various construction materials of different or similar costs and quality as the Budget allows.

The Architect/Engineer's role is to:

- Identify, assisted by the Project Manager, construction items and/or the scope of work which can be added to or deleted from the base Contract as alternates.
- Develop the alternates.
- Estimate the cost/value of each alternate.
- Forward any changes in bid form content to DISD for review and approval.

The Project Manager's role is to:

- Review the Architect/Engineer's proposed alternates and recommend for DISD approval prior to "Authorization to Bid".
- Conduct with the Architect/Engineer and DISD a pre-bid review prior to advertising for bid to include the following:
  - Incorporation of DISD Comments
  - Review of cost/value assigned to line items
  - Bidding strategy allowing adequate flexibility offered by the alternates to award the Contract within Budget.

### 4.5.5 Construction Contract Documents

The DISD's role is to:

- Provide to the Architect/Engineer through the Project Manager DISD's standard contracts for construction, general, supplemental conditions, and other documentation required by DISD.
- Provide a review of the Contract Documents including the Architect/Engineer's special conditions.
- Approve the Contract Documents.

The Project Manager's role is to:

- Review the Architect/Engineer's special conditions to the Contract Documents for appropriateness and completeness.
- Provide DISD Contract Documents to the Architect/Engineer.

The Architect/Engineer's role is to:

- Use the DISD standard construction contract, general and supplemental conditions as provided by DISD.
- Review the DISD standard Contract Documentation and recommend changes by preparing, for DISD approval, special conditions that amend the Contract Documents to provide for special project requirements.

### 4.5.6 Special Conditions of the Construction Contract

The DISD's role is to:

- Specifically review and approve the special conditions of the contract prepared by the Architect/Engineer.

The Project Manager's role is to:

- Review, confirm and recommend to DISD the special conditions of the construction contract.
- Assist the Architect/Engineer to determine applicable requirements of the general contractor in this manual as "The Contractor's role is to:"

The Architect/Engineer's role is to:

- Prepare special conditions of the construction contract to provide for requirements and conditions applicable to the specific project.
- Include specific project construction requirements in addition to the requirements of the construction and post-construction phases of these Guidelines and Procedures stated as "The Contractor's role is to:"
- Submit the special conditions to DISD through the Project Manager for review and approval.

### 4.5.7 Review Meetings

The DISD's role is to:

- Attend, as an option, periodic progress Construction Documents reviews with the Architect/Engineer and the Project Manager.
- Make timely decisions on issues resulting from the meetings regarding the following Construction Documents considerations:
  - Use of materials, components, systems and equipment in the project Design
  - Bid packaging
  - Cost and Schedules
  - Progress of the work and other Design issues
- Confirm that previous review comments are accurately incorporated into the final drawings and specifications:
- Include in the Documents requirement details for construction and establishing cost.
- Organization, format, consistency, completeness, coordination and clarity of all Construction Documents by each discipline.
- Consistency and conformation with DISD Design standards.
- Adequacy of site space, access, separation and security for Contractor and school activities as well as provisions for coordination to preclude on-site operational conflicts.
- Coverage, clarity and consistency of specifications to compliment the drawings and other Bid Documents.
- Moisture control for condensation and penetration of building envelope.
- Clearly indicate if a warranty, a guarantee or operations manual is required in applicable sections by graphically highlighting the specified manual, warranty, and guarantee.
- Specify that Documents shall be submitted to the Project Manager prior to Project Substantial Completion.
- Require Contractor to pay construction permit and utility tap fees.

The Project Manager's role is to:

- Conduct periodic progress Construction Document reviews between DISD and the Architect/Engineer.
- Prepare and distribute minutes of the meetings to DISD, DISD Consultants and the Architect/Engineer.
- Coordinate activities and services of DISD Consultants.
- Actively participate in the meetings to review the Design Documents and provide input on behalf of DISD as directed and required by DISD.
- Provide input for the following similar tasks performed during Design Development:
  - Construction cost and Schedules
  - Design recommendations
  - Design related information required from DISD

The Architect/Engineer's role is to:

- Attend and participate in the meetings as follows:
  - Provide appropriate Design materials and documentation for review and evaluation.
  - Provide timely request for DISD provided information and DISD Consultant services.
  - Assist the Project Manager in providing value engineering studies of major construction components.
  - Review and reconcile construction cost estimates with the Project Manager.
- Review the following issues as appropriate:
  - Design compliance with applicable industry and DISD standards.
  - Compliance with applicable governing codes and ordinances.
  - Consistency with DISD Facilities Program requirements.
  - Coordinated integration of all building systems and components.
  - Cost/value in selection and use of all materials and systems.
  - Serviceability, maintenance, replacement cost, durability and service life of materials, equipment and systems.
  - Water/moisture penetration and control of building envelope, including sub-grade, grade, exterior walls and roof components.
  - Interior and exterior school house environment.
  - DISD provided furnishings and equipment.
  - Local availability of materials and labor skills.
  - Security during construction/occupancy.
  - Provision for data communication systems.
  - Interior Design and furnishings.
  - Accessibility
  - Conformation of requirements with utility companies.
  - Identification of the presence of hazardous materials, such as asbestos, and the preparation of plans to mitigate or alleviate their interference with the Project.
- Document the review comments and incorporate the required items into the Documents.

### 4.5.8 Final Agency Review

The DISD's role is to:

- Review and approve the final construction drawings and specification subject to Architect/Engineer and Project Manager prior written confirmation that the Documents have been submitted to all regulatory agencies having jurisdiction over the project, obtain a list or comments by those agencies and permits for construction and occupancy.

The Project Manager's role is to:

- Confirm to DISD in writing that the final construction drawings and specifications have been reviewed by regulatory agencies having jurisdiction over the project, that deficiencies have been corrected and that the building permits are available.

The Architect/Engineer's role is to:

- Submit the drawings and specifications for incremental and final reviews and building permits by regulatory agencies having jurisdiction over the project.
- Correct any deficiencies noted during the reviews, resubmit for agency approval and building permits.

### 4.5.9 Construction Documents Submittal

The Project Manager's role is to:

- Conduct a formal review of the Construction Documents, plans and specifications with DISD and the Architect/Engineer, at the 60% and 95% completion stages.
- Write a letter to DISD at the time of submittal, recommending document acceptance.

The Architect/Engineer's role is to:

- Submit copies of Design calculations by each discipline of all elements, components, and systems of the Design when required.
- Make any corrections or revisions required by DISD to the Construction Documents.
- Review the cost information and advise the Project Manager and DISD, in writing, of any adjustments to the Design Development Cost Estimate or estimated time of construction.
- Document, in writing, that the drawings and specifications fulfill the Project scope of work requirements and that the Project can be completed for the Project Budget amount and allotted construction time.
- Affix professional architecture and engineering seals and signatures on all Construction Documents including addenda as required by Texas and local laws.

The DISD's role is to:

- Review the construction Documents.
- Issue written approval and acceptance of the Construction Document phase and authorize the Architect/Engineer to proceed on to the Bid Phase.

### 4.5.10 Provisional Construction Schedule

The Project Manager's role is to:

- Determine with DISD and the Architect/Engineer, at the completion of the Construction Documents phase, the optimum dates for construction, Substantial Completion and Final Completion.
- Submit the provisional Construction Schedule for DISD review and approval.
- Update the Project Schedule to include DISD approved provisional completion dates.

The Architect/Engineer's role is to:

- Include the DISD approved provisional construction schedule for Substantial and Final Completion in the Bid Documents as a requirement for construction.

## 5.0 BID AND AWARD PHASE

### 5.1 Bidding Documents

The Bid Documents shall include the following:

- Invitation to Bid
- Instruction to Bidders
- Bid Form
- Bid Bond
- Contract Documents
- DISD-Contractor Agreement
- Contract General, Supplemental and Special Conditions
- Construction Documents and addenda
- Contractor's Qualification Statement

The Architect/Engineer's role is to:

- Prepare the bid documents.
- Submit a draft of all bid documents to the Project Manager with the 100% completion of construction document submittal.
- Incorporate, with assistance from the Project Manager, any changes or additions to the bid documents and submit to DISD for review and approval.

The Project Manager's role is to:

- Review the draft bid documents including the special conditions to the Contract for coverage of specific requirements of the Project.
- Make recommendations to the DISD for approval of the bid documents.

### 5.2 Contractor Notification/Advertisements

Under public Contract laws in the state of Texas, advertisements shall be placed in an approved newspaper for public notices. Minority owned papers and publications shall also be utilized. The advertisement for bidding shall be placed to appear on one day of two consecutive weeks. There shall be a minimum of one week elapsed time after the 2nd advertisement before bids are due.

The Project Manager's role is to:

- Assist DISD in advertising for bids.
- Prepare, assisted by the Architect/Engineer, notices and advertisements to solicit bids for the Project and complete the following Notification to Bidders form.
- Submit the completed forms to DISD for approval and placing in the appropriate newspapers as well as assisting in the direct mailings to qualified Contractors.

The Architect/Engineer's role is to:

- Assist the Project Manager in preparing notices and advertisements to solicit bids by providing Project information input as required by the Project Manager.

The DISD's role is to:

- Receive, review, approve and place notices and advertisements to solicit bids.

### 5.3 Pre-Bid Conference/Site Visit

The Project Manager's role is to:

- Conduct, with the assistance of the Architect/Engineer, the pre-bid conference and site visit.
- Explain, assisted by the Architect/Engineer and Consultants, the Project requirements to the bidders, including the provisional Construction Schedule, cost control requirements, site access, staging areas, DISD Administrative requirements and special Project conditions.
- Conduct a question and answer forum.
- Confirm that the Architect/Engineer is recording all contractor questions requiring a modification or addition to the bid documents by addendum.
- Coordinate and confirm with DISD the conference and site visit date, time, and location.

The Architect/Engineer's role is to:

- Include the DISD approved pre-bid conference place, date and time information in the bid documents.
- Assist the Project Manager as directed during the pre-bid conference and site visit.
- Attend and participate in the pre-bid conference and site visit.
- Issue clarification of items raised at meeting.
- Record the minutes of the meeting and distribute to attendees.

DISD Affirmative Action Department Shall:

- Attend and participate in the pre-bid conference.

### 5.4 Addenda

The Architect/Engineer's role is to:

- Prepare addendum, estimate the cost and Construction Schedule impact of each addendum and forward the addendum to the Project Manager for review.
- Issue the DISD approved addendum to the bidders following DISD approval.
- Require the bidders to acknowledge the receipt of the addenda on the bid form.
- Inform the bidders of any approved bid period extension as part of the addendum.

The Project Manager's role is to:

- Review all proposed addenda and confirm the impact on construction cost, Consultant's fees and Project Schedule as well as any other significant considerations that may bear on the Project.
- Submit proposed addendum to DISD with recommendations for approval including recommendations for any time extensions.

### 5.5 Certificate of Insurance/Bonds

The Contractor's role is to:

- Maintain proper insurance coverage, as required by the Construction Documents, during construction.

The Project Manager's role is to:

- Maintain a file of current in-force certificates of insurance for the Project Manager, Contractor, Architect/Engineer, specialty Contractor or Consultant, and himself.
- Notify DISD immediately, in writing, in the event any insurance policies or bonds are allowed to lapse or if notified by the insurance agent or bonding company that these policies are no longer in effect.
- Verify that the bonding company is licensed to do business in the state of Texas and that the bonds are filed with the bonding company by a local agent or authority.
- Confirm that the Contractor's bonds remain in effect during the construction and warranty period.

The Contractor's role is to:

- Submit performance and payment bonds to DISD with the signed Contract in the bid documents.

### 5.6 Bid Opening

DISD shall hold a public bid opening which conforms to the public Contract laws of the state of Texas.

The bids shall be publicly opened and read aloud. The Contractor's name, the base bid, and a listing of alternates and confirmation of required submittal enclosures shall be read publicly.

The DISD's role is to:

- Conduct the bid opening.

The Contractor's role is to:

- Submit a single sealed envelope for the prime bid.

### 5.7 Bid Tabulation

The DISD's role is to:

- Receive, date and time stamp all bids received.
- Open and read aloud all bids.

The Project Manager's role is to:

- Tabulate the bids. Include the following information on the bid tabulation form:
  - Bidder's Name
  - Base Bid Amount
  - Adherence to Construction Completion Date
  - Alternate Bid Amounts
  - Addenda received
  - Proper Signatures
  - Bid Bonds
  - List of Sub-Contractors and M/WBE Participation

The Architect/Engineer's role is to:

- Review bid tabulation sheet for completeness and accuracy

### 5.8 Bid Evaluation

The Architect/Engineer's role is to:

- Evaluate bids and make recommendations to the Project Manager.

The Project Manager's role is to:

- Evaluate the validity of any claimed mistakes in bids.
- Prepare and submit to DISD a report of bid evaluations with recommendations and options.
- Independently evaluate the bids and reconcile his evaluation with the Architect/Engineer's.
- Submit written recommendations to DISD.
- Keep complete and clear notes of analyses performed during evaluation on file..

The DISD's role is to:

- Review the Project Manager and Architect/Engineer bid evaluation recommendations and make the decision on Contract award.

### 5.9 Contract Award

The Project Manager's role is to:

- Assist DISD in establishing and implementing the Contract award phase.
- Prepare and submit the construction Contract to the Contractor for execution.

The Architect/Engineer's role is to:

- Assist the Project Manager in the preparation of the construction Contract as directed by the Project Manager.

The Contractor's role is to:

- Sign the DISD-Contractor agreement and forward all copies to DISD.

The DISD's role is to:

- Prepare a board agenda item for "Award of Contract".
- Sign and distribute the agreement to the Contractor with copies to the Project Manager and the Architect/Engineer.

### 5.10 Permits

The Project Manager's role is to:

- Verify that the Architect/Engineer has submitted the Construction Documents to the local regulatory agency responsible for plan checks and issuance of building construction permits as required for Scheduled construction start-dates.

The Architect/Engineer's role is to:

- Submit the Construction Documents to the appropriate agencies for plan check/reviews.
- Correct any Construction Documents code deficiencies and re-submit documents for final review/approval in a timely manner.
- Expedite the Construction Documents through agency review as required to meet the Project Schedule

The Contractor's role is to:

- Make applications for and obtain all other necessary construction permits.
- Obtain all necessary construction permits and discuss prior to the start of construction and pay for all permits.

The Project Manager's role is to:

- Verify that the Contractor has obtained all required permits.

### 5.11 Bonds and Insurance Confirmation

The Contractor's role is to:

- Secure Performance and Payment Bonds immediately upon notice of intent to award Contract and prior to receiving a notice to proceed.

The Project Manager's role is to:

- Confirm that the Contractor has secured the required bonds and insurance.
- Confirm that the bonds and insurance are in force by a bonding company qualified to do business in the state of Texas.

### 5.12 Notice to Proceed

The Project Manager's role is to:

- Confirm that the construction Contract has been signed by DISD and the Contractor.
- Confirm that all bonds and insurance are in force and related documents and certificates have been received by DISD.
- Sign the notice to proceed and forward to the Contractor with copies to the DISD and Architect/Engineer.

The Contractor's role is to:

- Upon receipt of the notice to proceed, initiate Project construction activities.

The Project Manager's role is to:

- Update the Master and Project Schedules
- Establish the date for the pre-construction meeting.

The Architect/Engineer's role is to:

- Initiate construction Contract administration activities.

## 6.0 CONSTRUCTION PHASE

### 6.1 Roles and Responsibilities

The DISD's role is to:

- Oversee the construction management process project delivery.
- Direct the development of the procedures for and oversee the construction management, construction site operations, QA/QC, safety, turnover and startup of facilities.
- Be responsible for cost management commencing with the awarding of construction contracts.
- Direct and oversee all construction through the Program Management Consultant firm (a contractor to DISD) and their construction subcontractors.
- Administer the construction phase of the Program Management Consultant contract.
- Oversee the timeliness of actions and responses from Project Manager, Architect/Engineer and General Contractor.
- Review and verify the accuracy of weekly and monthly progress reports.
- Oversee and verify the adequacy of project supervision.
- Oversee and verify the control of project budgets.
- Oversee and verify the tracking of project schedules.
- Monitor performance of the Architect/Engineer, General Contractor, Project Manager, and other consultants.
- Direct and co-approve changes to schedule, budget, and scope.
- Represent to DISD and the Community the construction aspects of the DISD Facilities Bond Program.

The Project Manager's role is to:

- Monitor periodically the Work progress and all Contractor, Architect/Engineer and DISD Consultant activities during construction in accordance with DISD-Project Manager Agreement.
- Implement and administer the DISD Guidelines and Procedures.
- Verify construction permits.
- Report periodically the construction progress cost and Schedule to DISD.
- Make recommendations to DISD regarding construction.
- Update Project Budget.
- Review, confirm and update Schedules.
- Update cost reports and Schedules.
- Receive notifications of suspect hazardous material presence and report to DISD, the Architect/Engineer, and the Contractor.
- Conduct pre-construction conference and weekly and monthly Project meetings.
- Confirm Contractor's Schedule of Values.
- Request Contractor's recovery Schedule if required.
- Confirm that bonds and insurance certificates are current and are in effect.
- Coordinate DISD's Consultants.
- Assist the Architect/Engineer in monitoring the Contractor's Quality Assurance program.
- Receive, review, distribute and file Project photographs.
- Review request for changes, and check Cost Estimates.
- Determine legitimacy of time extension requests.
- Review and certify Contractor's applications for payment.
- Assist DISD and the Architect/Engineer to inspect and prepare the checklist for Substantial Completion, Final Completion, and the end of the warranty period.

- Assist DISD and the Architect/Engineer in determining when the Project is substantially complete.
- Verify Contractor establishment and the maintenance of a set of as-built prints.
- Monitor the progress of receiving and reviewing the operation and maintenance manuals.
- Assist the Architect/Engineer in determining when the Project is finally completed.
- Issue a certificate of final payment and a recommendation for final payment to DISD.
- Coordinate Architect/Engineer and Contractor warranty work efforts.

The Architect/Engineer's role is to:

- Administer the construction Contract in accordance with the DISD-Architect/Engineer agreement.
- Assist the Project Manager in conducting the pre-construction conference.
- Participate in weekly and monthly Project meetings.
- Make on-site observations and subsequent written reports.
- Reject non-conformance work.
- Review, evaluate and act in accordance with the Contractor's Schedule.
- Review, verify and certify the Contractor's application for payment.
- Review and recommend action based upon test results and inspection reports.
- Review submittals for conformance.
- Respond to Requests for Information (RFI) from contractor.
- Prepare request for change.
- Review, confirm, and recommend Contractor's Change Proposal.
- Prepare Change Orders.
- Interpret the Contract documents.
- Make recommendations on claims to DISD, when requested to do so.
- Review and make recommendations on material and system substitutions.
- Prepare checklists of incomplete and non-conforming work at Substantial Completion, Final Completion and end of the warranty period.
- Assist the Project Manager and DISD in determining when the Project is substantially complete.
- Issue certificate of Substantial Completion.
- Periodically review the Contractor's as-built prints for accuracy and completeness.
- Record the as-built conditions on the original transparencies.
- Review Contractor provided warranties, operations and maintenance materials.
- Determine with DISD and the Project Manager when Project is finally complete.
- Review, verify and certify Contractor's final application for payment and recommend to DISD.
- Assist in obtaining occupancy permit.
- Provide services during warranty period.
- Perform inspection at end of warranty period and prepare a checklist.

### 6.2 Pre-Construction Conference

The pre-construction conference shall include a review of the Contract status, special DISD, Architect/Engineer, and Project Manager requirements, guidelines, and procedures.
Attendees of the pre-construction meeting shall include:

- Project Manager
- DISD Representative
- Architect/Engineer's Project Engineer, Project Architect and Construction Contract Administrator
- Consulting Engineers

- Prime Contractor's Project Principal, Superintendent and Field Engineer
- All Sub-contractors

The pre-construction conference minutes shall be distributed within 3 days of the meeting to each attendee and appropriate Team Members not present. The minutes shall state that there shall be 5 working days to make any objection, exception, or correction to the minutes in writing.

The Project Manager's role is to:

- Conduct a pre-construction conference with all of the Project Team Members and define lines of communication and authority.
- Distribute written notice of the meeting and agenda at least one week in advance.
- Provide a copy of all DISD provided forms to be used by the Contractor prior to the meeting for review and use by the Contractor.
- Coordinate with each campus representative, i.e. principal, etc.
- Prepare a detailed agenda for the meeting. Include in the detailed agenda the following items:
  - Team introduction
  - Authorities and Responsibilities
  - Project Overview, including Review of Contract Documents
  - Communications and Emergency Contacts
  - Parking Requirements
  - Temporary and Storage Facilities
  - Temporary Utilities
  - Submittal Requirements and Review
  - Time Extension Procedures
  - Progress Payments Procedures
  - List of Sub-Contractors
  - Construction Scheduling and Major Milestones
  - Special Site Conditions and Constraints
  - Construction Conflicts
  - Status of the Building Permit
  - Change Order Procedures
  - Weekly Progress Meetings
  - Request for Information/Clarification Procedures
  - Contractor Claim Procedure
  - Job site security
  - Cleanup and Trash Removal
  - Contractor Records
  - M/WBE Reporting Requirements
  - Contract Close-out
  - Inspection and Testing
  - Warranty Requirements

The Architect/Engineer's role is to:

- Assist the Project Manager with establishing the pre-construction meeting agenda.

The Project Manager's role is to:

- Provide the following information in the meeting minutes:
  - Date, Location and Time of the Meeting
  - Attendees, their Firm, and phone numbers
  - Items discussed, decisions made, unresolved issues, individuals required to act upon each action item.

- Sign and distribute the meeting minutes to attendees and Project Team Members not present.

### 6.3 Schedule of Values

The Schedule of Values shall be based upon the CSI Division format, as a minimum, and present the cost breakdown of the various portions of the Work. A more extensive breakdown may be required for some projects.

Once approved by DISD, this Schedule will be used as a basis for review/approval of the Contractor's applications for payment.

The Contractor's role is to:

- Submit a Schedule of Values and obtain approval of such prior to submission of the Application for payment.
- Include the Schedule of Values and the percent completion for each item with applications for payment.

The Project Manager's role is to:

- Review the Contractor's Schedule of Values. The approved Schedule of Values shall be the basis of the Contractor's progress payment percentages.

### 6.4 Construction Quality Assurance Program

Construction quality shall be defined as the conformance to the design intent and the Construction Documents. The construction quality assurance program shall define the procedures required to evaluate construction materials, methods and procedures for conformance to the design intent and Construction Documents.

The construction quality assurance program shall be based upon the following:

- Applicable government codes, laws, regulations and ordinances
- Construction Contract documents
- Governmental agency inspections
- Construction materials testing and inspection requirements
- Project Guidelines and Procedures
- Industry Standards

The Architect/Engineer's role is to:

- Specify and detail the quality assurance requirements in the Construction Documents.
- Visit the site in accordance with the DISD-Architect/Engineer agreement.
- Interpret the Contract documents and judge the performance thereunder by the Contractor.
- Submit a written report to DISD and the Project Manager subsequent to each visit.
- Keep the Project Manager informed of the progress and quality of the Work.
- Require Consultants to make on-site observation reports.
- Review and recommend to DISD substitutions for specific materials proposed by the Contractor.
- Reject work not in conformance with the Contract documents.

The Project Manager's role is to:

- Prepare and transmit to DISD and the Architect/Engineer a notice of non-conforming work when the Work does not conform to the requirements of the Contract documents.
- Request clarification from the Architect/Engineer in matters requiring interpretation of the Contract documents.

The DISD's role is to:

- Hire an independent material testing firm.

### 6.5 Construction Phase Files

- The Project Manager's role is to:

  Establish a complete Project construction file consisting of:

  - Construction Contract
  - Construction Contract Documents
  - Addenda
  - Bonds and Insurance
  - Change Orders/Change Proposals and Logs
  - Time Extensions
  - Shop Drawing and Submittal File with logs
  - Certificates of Substantial Completion
  - Correspondence between the Architect/Engineer, DISD, Contractor and Local Regulation Agencies.
  - Requests for Information with a log
  - Pay Requests
  - Architect's Supplemental Instructions
  - Contractor's Daily Field Reports
  - Construction Materials Test Reports
  - Inspection Reports
  - Minutes of Weekly and Monthly Construction Progress Meetings
  - Survey reports
  - Geotechnical Exploration reports
  - Professional Services Supplemental Authorizations (PSSA)
  - Pre-Construction
  - Photographs
  - Invoices
  - Checklist
  - Schedules
  - Status Reports
  - Warranties

### 6.6 Project Meetings

Progress Meetings shall be held to determine construction progress, review upcoming work activities, eliminate potential coordination conflicts, and maintain communications among all parties involved.

The Project Manager's role is to:

- Conduct the meeting and establish, assisted by the Architect/Engineer, meeting location and prepare the meeting agenda. The agenda shall include:
  - Action Item Report
  - Previous Meeting Minutes
  - Previous Construction Progress
  - Project Status
  - Change Proposal Log Status
  - Submittals Logs Status
  - Application for Payment Status
  - Site Security Issues
  - Special Site Conditions Affecting Construction
  - Maintain a file for all meeting minutes.
  - Be responsible for minutes of the meeting .
  - Distribute, within 3 days after the meeting date, copies of the minutes to all attendees.
  - Notify the attendees in the minutes that they have 5 working days to formally make any objections or corrections to the minutes in writing.
- In each set of meeting minutes:
  - Give a reference number consisting of the meeting number and the item number, such as 5.3 for progress meeting number 5, item number 3 for the initiation of an item requiring action or resolution being first reported in the minutes.
  - Give additional items introduced at the same meeting a consecutive number such as 5.4, 5.5, etc.
  - Identify Project team member responsible for an item of discussion requiring action in the "Action" column.
  - List action items that have not been resolved in minutes of subsequent meetings and refer to them by the original item number.
  - Provide copies of the minutes of meeting.

### 6.7 Review of Existing Conditions

Prior to the start of construction on existing facilities, the Contractor, the Architect/Engineer and the Project Manager shall conduct an on-site inspection of existing conditions.

The Project Manager's role is to:

- Photograph, using 35mm film (or video in lieu of 35mm), the condition of existing and adjacent building facilities, sidewalks, curbs, gutters, fencing, asphalt surfaces and trees and plants that are to remain in and adjacent to the construction area.

The Architect/Engineer's role is to:

- Verify with DISD and the Contractor the location of existing utilities.
- Review and document, assisted by the Contractor and Project Manager, the existing and adjacent building cracks and other damage existing prior to construction start-up.
- Include in the existing conditions report his photographs with descriptions, locations and dates.
- Review the report and confirm by signature agreement of the existing conditions.

### 6.7.1 Concealed Conditions

The Architect/Engineer's role is to:

- Document and provide a scope of work and Cost Estimate for each concealed condition requiring a change in Contract cost.

The Project Manager's role is to:

- Review and verify cost and Schedule Estimates for collection regarding existing conditions and submit to DISD with recommendations.

### 6.8 Contractor Submittal Schedule

The Project Manager's role is to:

- Distribute any Schedule of submittals received from Contractor to DISD and Architect/Engineer for review.

The Architect/Engineer's role is to:

- Review, approve, and cooperate with the development of the Contractor's Schedule of submittals.

### 6.9 Temporary Facilities

When required, temporary facilities shall be located as near as possible to the main construction entrance gate to control traffic, deliveries and visitors. The Project Management office space, when required, shall accommodate the requirements of the Project Manager, Architect/Engineer, Consultants, and an on-site conference area.

The Architect/Engineer's role is to:

- Prepare, prior to bidding, a plan to be included in the Construction Documents indicating the layout of staging areas, fencing, and Contractor's parking.

### 6.10 Construction Schedule

The Project Manager's role is to:

- Review the Contractor's Construction Schedule and verify that the Schedule is prepared in accordance with the Contract requirements.
- Confirm that completion dates comply with the DISD approved Master and Project Schedule.
- Update the Project and Master Schedules using MICS upon approval by DISD.
- Include a copy of the updated Contractor's Construction Schedule in the monthly progress report to DISD with application for payment.
- Determine with DISD any constraints or restrictions imposed on the construction activities such as specific or limited work periods due to school operations or Scheduled events.
- Review the Contractor's Construction Schedule for overall compliance with the Project Schedule, completeness and feasibility.
- Interface with Contractor's Scheduler to reconcile any discrepancies, omissions or recommendations to his Construction Schedule.
- Alert DISD to any factors, circumstances, decisions or activities which may effect the Construction Schedule.

- Monitor Architect/Engineer and Construction related activities and responses to verify compliance with the Construction Schedule.
- Review the Contractor's Construction Schedule. If the Construction Schedule is considered not to comply with the Contract document requirements, the Contractor shall be notified to review and revise the Construction Schedule into compliance. Failure of the Contractor to submit a Construction Schedule in full compliance with the Contract documents may result in a delay in processing progress payments.
- Review and return the Contractor's Construction Schedule with summary comments within 4 calendar days.
- Determine the total number of extension days to which a Contractor is entitled and recommend to DISD for approval. A Change Order weather chart shall be incorporated in the construction specifications.

The DISD's role is to:

- Review and approve the Contractor's Construction Schedule.

The Architect/Engineer's role is to:

- Review, evaluate, and implement Schedule information provided by the Contractor.

### 6.11 Project/Special Signs

The Project sign shall include:

- 1992 Facilities Bond Program
- Name of the Project
- The School, DISD Board of Trustees, and the General Superintendent
- The Architect/Engineer Firms
- Project Management Firm
- General Contractor

The Architect/Engineer's role is to:

- Design the Project sign incorporating the above information based on standard size and format.
- Locate the Project sign in a prominent location in accordance with local sign ordinances and as approved by DISD.
- Describe, with detail drawings and specifications, the sign mounting and support system as required by site conditions, local sign ordinances and as approved by DISD.
- Develop, with DISD and the Project Manager, the required signs to protect on-going school operations from construction activities.

The Project Manager's role is to:

- Confirm the sign location and make recommendations for acceptance to DISD.
- Verify Contractor maintenance and replacement of construction and safety signs as required during Project construction.

### 6.12 Contractor Daily Field Report

Daily Reports shall be used to record a chronological, day-to-day account of the work force, the respective activities performed, the weather conditions and any specific events that take place on the Project.

The Daily Report shall not be used as a communication tool. Any situations requiring specific action shall be brought to the attention of the appropriate party by means of written correspondence, memoranda or meeting minutes.

Photographs may be used with the Daily Report to clarify or confirm statements and concerns.

The Project Manager's role is to:

- Receive, review and comment on significant factors in the Contractor's Daily Report information.
- Incorporate the Contractor's Daily Report information, along with any additional comments, in the Project files.
- Use the Daily Report to prepare the DISD monthly progress reports by summarizing verified information contained in the reports.

### 6.13 Progress Photographs

Project photographs shall be taken for the purpose of documenting the progress of the Project as required by DISD.

### 6.14 Requests for Information

Requests for information may be initiated by the Architect/Engineer, Consultants, or the Contractor. All requests for information shall use DISD Forms.

The Architect/Engineer's role is to:

- Receive, log and distribute all requests for information (RFI).
- Receive, log and distribute all responses to requests for information (RFI).
- Maintain the request for information log.
- Distribute the log at the weekly and monthly Project meetings.

The Program Manager's role is to:

- Monitor progress of RFI's.

### 6.15 Submittals

The Architect/Engineer's role is to:

- Maintain a submittal log using the DISD Form.
- Update the submittal log weekly and submit to the Project Manager at the weekly meeting.
- Review, assisted by the Project Manager, and approve the submittal Schedule for:
  - Compliance with all construction document requirements
  - Sufficient review time duration
  - Compliance with the Construction Schedule

The Project Manager's role is to:

- Monitor document flow relative to the submittal Schedule and confirm that all parties are in compliance with the due dates.

### 6.15.1 Submittal Document Flow

A letter of transmittal shall accompany each submittal document package.

The Architect/Engineer's role is to:

- Receive, date, log and review all submittal documents for:
  - Contractor signature notations
  - Number of copies
  - General conformance to the Construction Documents requirements
  - Noted or "clouded" deviations from Contract requirements or substitutions
  - Note discrepancies on the transparency, stamp, note disposition, sign, copy/print, keep a record copy, send a copy to the Project Manager, and transmit documents to the Contractor.
  - Review. (If Consultant review is required, keep a referral copy, and transmit to the Consultant.)

The Consultant Shall:

- Receive, date, stamp, review, note any discrepancies, stamp indicating disposition, sign, copy or print, keep a file copy and promptly return to the Architect/Engineer, or request that the Contractor revise and resubmit.

The Architect/Engineer's role is to:

- Review Consultant's disposition, log, note discrepancies, stamp (noting disposition), sign, copy/print, keep a copy, sent a record copy to the Project Manager and transmit remaining copies to the Contractor.

The Project Manager's role is to:

- Review for submittal documents Architect/Engineer and Consultant note disposition, date and log return date relative to submittal Schedule.
- File copy of record.

### 6.16 Testing and Inspection

All work and materials installed on the Project shall be subject to appropriate inspection as required by the construction specifications, design standards, manufacturer standards, shop drawing requirements, codes, sound construction practices and any other Contract performance requirements.

All material and equipment delivered to the site and incorporated in the Work that requires inspection testing shall be verified for quantity, condition and conformance with the Contract documents and approved shop drawing/equipment submittals by the Construction Materials Testing Firm's inspectors. The Architect/Engineer shall recommend that all unsatisfactory/non-conforming material or equipment shall be immediately rejected by issuing a notice of non-compliance.

Project construction materials testing services shall have the full cooperation of all Project Team Members.

The DISD's role is to:

- Retain the services of a qualified Construction Materials Testing Firm for each Project when needed.

The Project Manager's role is to:

- Coordinate the services of the Construction Materials Testing Firm provided by DISD.
- Maintain a record file of all Project construction materials testing reports and confirm that the Project testing requirements are being met.
- Submit testing reports to DISD.
- Turn over complete files of all Project construction materials testing reports to DISD at final Program completion.

The Construction Materials Testing Firm Shall:

- Conduct, with the cooperation of the Contractor and the Architect/Engineer any fabrication shop, manufacturing, production, or assembly plant inspections when required by the Construction Documents.
- Designate a Project Principal to communicate and coordinate with the Architect/Engineer, the Project Manager and the Contractor regarding Project construction materials testing results, scheduling and scope of services.
- Coordinate with the Architect/Engineer and Contractor to provide construction materials testing services required in frequency and quantity as specified in the Construction Documents.
- Create and distribute construction materials testing reports with the following items:
- Project name, Project number, location, source of material or product, test performed, time spent, inspector name, name of person scheduling the test, test results, applicable specifications or requirements and registered engineer review.
- Clear description of job-site activities tested, monitored, checked or verified with observations.
- Clear indication of conformance status of test results with non-conformance tests stamped "Failed" in red ink on all test Reports.
- Clear documentation of whom was informed of the test results on-site.
- Clear documentation of all action taken to correct a non-conformance test result or lack of any action.
- Identification of unusual job-site conditions, situations or problems.
- Job-site meetings attended or held and items discussed.
- Provide monthly summary reports for construction materials such as concrete, soils and as specified in the Construction Documents.
- Provide a field copy of the inspection report to the Architect/Engineer or his job-site representative on the same day of the inspection test and clearly indicate conformance or non-conformance of the test results to the appropriate specification requirements.
- Inform the Contractor's field superintendent at the conclusion of the field test of the results and clearly communicate conformance or non-conformance.
- Create and distribute typed inspection testing reports to the Project Manager, Contractor, Architect/Engineer.
- Create and distribute typed laboratory test reports such as concrete strength test results, soils test results or other laboratory construction materials test reports to the Project Manager, Contractor and the Architect/Engineer in a timely manner.
- Clearly indicate conformance or non-conformance of the test results to the appropriate specification requirements and inform the Architect/Engineer and the Project Manager by telephone in case of non-conformance test results.

- Document and report to the Architect/Engineer and the Project Manager all construction materials testing problems encountered, discovered, tested or observed by writing and sketches, photographs or other clarifications required to detail the subject of the action report.
- Monitor, test, sample, inspect, and verify construction materials. Conditions requiring immediate action, non-conformance or disputes shall be communicated immediately to the Architect/Engineer and the Project Manager.
- Follow up and re-test non-conformance items when ready for a re-test and clearly indicate "re-test" on the inspection report. In the event no corrective action has been initiated by the Contractor for the non-conformance item, the Construction Materials Testing Firm shall immediately inform the Architect/Engineer, Project Manager and the Contractor in writing and by telephone.
- Immediately inform the Architect/Engineer, Project Manager and the Contractor of site personnel refusal to comply with inspection testing directive or in the case of disagreement over the interpretation of Contract document materials performance requirements.
- Recommend to the Architect/Engineer and the Project Manager rejection of work or removal of work in place with supporting test results documenting non-conformance.

The Project Manager's role is to:

- Attend, when required, scheduling meetings that involve or affect construction materials testing scope of services.

The DISD's role is to:

- Coordinate with the Project Manager and the Construction Materials Testing Firm all specialized inspection testing.

The Architect/Engineer's role is to:

- Confirm, with assistance from the Project Manager, that all construction materials requiring inspection testing have been tested in accordance with the applicable codes and Construction Documents.

## 6.17 Change Proposal/Change Orders

Change Proposals may be requested by DISD, the Project Manager, Architect/Engineer or Contractor. Change Proposals become Change Orders when approved by DISD.

### Change Proposal Procedure

The Architect/Engineer's role is to:

- Receive and qualify or initiate all Proposal Requests on approved DISD format.
- Prepare 3 original Change Proposals.
- Assign Change Proposal number.
- Log Change Proposal date, number and description.
- Provide supporting documentation, drawings and/or specifications, if required.
- Log date documentation requested.
- Evaluate the proposed change for Project design compatibility.
- Produce drawings and specifications, when required, to fully describe the proposed change.
- Forward the Change Proposal documents to the Contractor for pricing.

The Project Manager's role is to:

- Review the Change Proposal documents for completeness, appropriateness, constructability and cost and Schedule effectiveness.
- Prepare and update change proposal log.

The Architect/Engineer's role is to:

- Evaluate the Contractor's price and time extension, forward to consultants for evaluation, when appropriate.
- Return the Change Proposal to the Project Manager with recommendations.
- Produce a written evaluation and a recommendation with justification for or against the change

The Consultant Shall:

- When requested by the Architect/Engineer shall evaluate the Contractor's price and time extension and return the Change Proposal to the Architect/Engineer with recommendations

The Project Manager's role is to:

- Evaluate the Contractor's price/time extension, compared to the Architect/Engineer's recommendations, for overall impact to Project Budget and Schedule
- Forward 2 originals of the Change Proposal with evaluation, recommendations and the Architect/Engineer's evaluation to DISD.
- Include in the Change Proposal written evaluation of the following items:
  - Budget impact
  - Schedule impact
  - Cost/time evaluation of Architect/Engineer's recommendation, Contractor's back-up materials and his Estimate.
  - The Architect/Engineer documentation describing change.
  - A total cost of all changes to date.
  - Log date documentation forwarded to DISD.

The DISD's role is to:

- Review Change Proposal, approve, sign, date and forward the Change Order, if approved, to the Project Manager or inform the Project Manager of the rejection.
- Request additional information, when required, from the Project Manager.

The Project Manager's role is to:

- Forward a signed and dated original to the Contractor, a copy to the Architect/Engineer and a file copy.

The Architect/Engineer's role is to:

- Log the date of Change Proposal approval or rejection by DISD.

**Change Order Procedure**

The Architect/Engineer's role is to:

- Upon DISD approval of Change Proposal, prepare a Change Order using DISD Form and forward to the Contractor for signature.
- Forward the signed Change Order to the Project Manager.

The Project Manager's role is to:

- Receive and review the Change Order and forward to DISD with a recommendation.
- Log the Change Order routing dates.

The DISD's role is to:

- Receive and review the Change Order and recommend to the Board for approval.
- Return the Board approved Change Order originals to the Project Manager.

The Project Manager's role is to:

- Receive the DISD approved Change Order and forward an original to the Contractor with a copy to the Architect/Engineer.
- Enter the Change Order into the MICS Change Order log and update the Project Budget, Schedule, Master Schedule, and Schedule of Values.
- Distribute to the Architect/Engineer, Contractor, and DISD.

### 6.18 Time Extensions

The Project Manager's role is to:

- Provide an independent evaluation of any time extension required and compare his evaluation to the Contractor's and use his evaluation to support recommendations to DISD.
- Review and comment on the Contractor's requests for time extension and forward with a recommendation and clear indication of the cause of delay to DISD for approval if the request is appropriate.
- Review all time extension requests within a Change Proposal for responsiveness and feasibility relative to the Construction Schedule.
- Recommend to DISD acceptance based upon the time extension as well as estimated cost of the Change Proposal.
- Issue a Change Order for approved time extensions.

The DISD's role is to:

- Review the request within 10 work days.

### 6.19 Contractor's Application for Payment

The Architect/Engineer's role is to:

- Receive, date stamp and log-in pay requests.
- Review for completeness, accuracy and retainage held.
- Evaluate back-up materials and confirm invoices.
- Confirm quantities and amounts for materials in-place and proper storage.
- Compare progress billed against field observations.
- Confirm that cost of non-conforming installations, damaged materials or equipment and liquidated damages have been deducted.
- Make sure that Change Orders which have not been formally approved in writing by DISD are excluded from pay requests.
- Confirm Contractor's compliance with all terms and conditions of the Contract relating to pay requests and scope of work.
- Certify the Contractor's pay request, retain 1 copy for his records and forward the pay requests to the Project Manager.

The Project Manager's role is to:

- Forward the certified pay application to DISD with a letter of recommendation for acceptance.

The DISD's role is to:

- Process the pay requests for payment.
- Mail check directly from DISD accounting with copies to the Project Manager, Architect/Engineer and Facilities Bond Department.

### 6.20 Claims Mitigation

It is the goal of DISD that no projects end with claim of delay, disruption or interference by the Contractor. This goal is adopted by the Project Manager and Architect/Engineer. All parties recognize that prompt recognition and resolution of problems that might result in claims is the most important factor in mitigating claims.

### 6.21 Stop Work Order

DISD has the sole contractual authority to order the Contractor to stop work.

The Project Manager's role is to:

- Recommend to DISD a Stop Work Order when the circumstances warrant such an action.
- Notify the Architect/Engineer when DISD issues a Stop Work Order.
- Verbally notify DISD, when necessary, of the need to issue a Stop Work Order. Issue written recommendations to DISD with detailed causes, observations and circumstances for the stop of work.

The DISD's role is to:

- Issue a Stop Work Order to the Contractor in writing clearly indicating the causes for this action.
- Determine if circumstances have been corrected and reverse the Stop Work Order.

The Architect/Engineer's role is to:

- Examine circumstances causing the Stop Work Order and make recommendations to DISD regarding corrections.

### 6.22 School/Staff Relations and Review

All Contact between the Project Manager, Architect/Engineer, Contractor, Consultants, Sub-Contractors, Vendors, Suppliers, Installers, etc. and DISD School Administration, Faculty, Staff, Employees and Students shall be administered and approved by the DISD Executive Manager.

The Project Manager's role is to:

- Serve as the Project Team point of contact for all requests to interface with DISD School Personnel or Students
- Contact DISD Division Executive for request considerations and approval
- Advise party seeking DISD School Personnel or Students interface procedure as directed by the DISD Division Executive.

### 6.23 Retainage

The retainage amount shall be in accordance with the Construction Contract.

The DISD's role is to:

- Not reduce or return retention monies that have been previously withheld until Project is completed and request for final payment is made.

The Project Manager's role is to:

- Confirm the retainage amount in each pay application.

The Architect/Engineer's role is to:

- Confirm the retainage amount in each pay application.

### 6.24 Substantial Completion Checklist

Substantial Completion shall be defined as the date when construction is sufficiently complete in accordance with the Contract documents, so that DISD may occupy the Work or designated portion, when requested by DISD, thereof for the use for which it was intended.

The Architect/Engineer's role is to:

- Conduct with the Contractor a pre-inspection walk-through to identify obvious problems that can be corrected prior to the formal inspection.
- Prepare a comprehensive checklist of items to be corrected or completed and submit the checklist with the certificate of Substantial Completion to the Contractor for completion.
- Forward copies of the certificate Substantial Completion and the checklist to DISD and the Project Manager.
- Issue a Certificate of Substantial Completion when it is determined that the construction has reached the point of Substantial Completion, or when DISD requests taking a portion of the project early.

The Project Manager's role is to:

- Conduct with the Architect/Engineer, the Contractor and DISD an inspection to itemize all remaining work to be completed or corrected.

### 6.25 Tests/Start-up

The Project Manager's role is to:

- Coordinate all Contractor equipment tests and start-up inspections with DISD and appropriate agency inspectors, and report the test results.

The Architect/Engineer's role is to:

- Monitor the Contractor equipment tests and start-up inspections.

### 6.26 Move-In and Occupancy

Move-in shall include the installation of DISD provided furniture, equipment and supplies as required for Facility operations.

The Architect/Engineer's role is to:

- Coordinate DISD close-out activities and the Contractor close-out activities to assure a smooth transition between construction and occupancy in accordance with the occupancy Schedule.
- Expedite any incomplete or incorrect checklist items required from the Contractor prior to move-in.
- Confirm a coordinated transition for property security, Facility safety and maintenance program from the Contractor to DISD.
- Confirm that required building air conditioning, permanent power, water and sewer are operational prior to move-in and installation of furniture, equipment and supplies.
- Confirm that all life safety and fire protection systems are properly functioning prior to move-in.
- Advise DISD, in writing, not to place any furniture, equipment and supplies in any area subject to damage by construction activities or water.
- Verify that all drinking fountains are operational and potable water supply lines have been flushed of all construction debris or stale or foul water prior to move-in.
- Advise DISD regarding means and methods of protecting new construction from damage during move-in phase.

### 6.27 Record As-Built Drawings

The Architect/Engineer's role is to:

- Periodically review the Contractor's as-built drawings for accuracy and completeness.
- Furnish to DISD a set of record drawings as required by DISD.
- Return all original documents provided by DISD with Project files as deemed necessary at the end of the Project.

## 7.0 POST CONSTRUCTION

### 7.1 Project Close-out

The Project close-out checklist provides an outline of key activities and space for each item date completed.

The Architect/Engineer's role is to:

- Administer the following close-out activities by the Contractor prior to Final Completion:
- Report of testing, balance, surveys and other required records.
- Confirmation that the Contractor has completed the Substantial Completion checklist items by the Architect/Engineer, Consultants, Project Manager, and DISD.
- Tagged building keys distributed to DISD.
- Warranties, guarantees, maintenance and operations manuals distributed to the Architect/Engineer and Consultants for verification.
- As-built record drawing prints distributed to the Architect/Engineer for incorporation into the original tracings and then distributed to DISD.
- Contractor evaluations.

The Project Manager's role is to:

- Perform the other close-out activities, as follows:
    - Assist in the final inspection to verify Substantial Completion checklist items.
    - Evaluate the need for and process liquidated damages, as required.
    - Process the Contractor's final pay request.
    - Complete the Contractor evaluations.
    - Assist DISD in coordinating move-in.
    - Deliver Project files and records to DISD.

### 7.2 Warranties, Guarantees, Operation Manuals

The Architect/Engineer's role is to:

- Receive all Warranties, Guarantees and Operations manuals from the Contractor and review for submittal completeness and compliance with the Construction Documents requirements.
- Deliver the documents to the Project Manager with a transmittal letter indicating the status of compliance.
- Return all documents not in compliance to the Contractor for re-submittal.

The Project Manager's role is to:

- Confirm all required Warranties, Guarantees, and Operations' manuals have been delivered to DISD prior to Project Final Completion.

### 7.3 Final Completion

Final Completion shall be defined as when the Contractor has completed all the requirements of the Construction Documents.

The Project Manager's role is to:

- Submit the Contractor's list to DISD for concurrence with his and the Architect/Engineer's recommendations.

The Architect/Engineer's role is to:

- Request that the Contractor deduct the value of remaining items from the request for final payment in addition to the following:
  - Payments and other valuables owed to DISD.
  - Unresolved DISD claims.
  - Value of any outstanding equipment or supplies purchased by the Contractor and paid for by DISD.
  - Value of unfulfilled or incomplete Contract requirements shall be the cost to complete the Work using another Contractor.
  - Value of outstanding DISD audit items.

The Architect/Engineer's role is to:

- Confirm that all Contractor close-out requirements have been completed and accepted by DISD such as:
  - As-built drawings
  - Warranties, guarantees and operations' manuals
  - Equipment tests and start-up
  - Occupancy permits
  - Release of surety

The Project Manager's role is to:

- Submit, assisted by the Architect/Engineer, the list of incomplete Contract items with related estimated cost justifications, and recommendations by the Project Manager for DISD action on each item.
- Receive and process the Contractor's final payment request and forward to DISD with a recommendation for payment.
- Include the statement from the Architect/Engineer to the Project Manager that the Project has been completed in accordance with the Contract documents

### 7.4 Final Payment

Final payment requests shall be submitted after all checklists have been completed, testing and balancing of systems, as built or record drawings submitted, guarantees, warrantees and operations' manuals submitted and accepted by the Architect/Engineer.

The certificate for final payment shall include the submission of Contractor's affidavit of payments of debts, release of liens, and the surety company consent to final payment.

The Architect/Engineer's role is to:

- Review and certify the Contractor's final payment application and forward to the Project Manager for recommendation of payment to DISD.

The DISD's role is to:

- Make final payment.

### 7.5 Warranty Period and Inspection

The warranty period shall be in accordance with construction Contract requirements.

The DISD's role is to:

- Notify the Architect/Engineer of any warranty concerns during the warranty period.

The Project Manager's role is to:

- Determine whether or not warranty-covered problems exist.
- Coordinate any required warranty-covered repairs.

The Architect/Engineer and Consultants Shall:

- Assist the Project Manager when required.
- Inspect the Project at the expiration of the warranty period and prepare a warranty checklist of items to be completed by the Contractor.
- Forward the checklist to the Contractor for signature for concurrence.
- Submit copies of the signed checklist to DISD and the Project Manager for concurrence and approval.

## 8.0 CLAIMS AVOIDANCE

### 8.1 Documentation and Preservation of Records

The Project documentation shall be well-detailed and organized to establish facts of Project events:

- Documentation must be prepared at or near the time of the event.
- Author had personal knowledge of the event and based content on such knowledge.
- Record keeping is part of the normal or regular course of business.

The Project Manager's role is to:

- Implement an organized method of document control that may be used in defense of claims.
- Confirm that all persons with knowledge of Project facts shall make detailed and auditable records of all relevant events on the Project as a regular business practice.

The Architect/Engineer's role is to:

- Implement an organized method of documentation consistent with that employed by the Project Manager.

### 8.2 Claim Evaluation Procedure

The evaluation of construction claims shall include the following steps:

- A merit evaluation to determine the basis of a claim.
- Entitlement analysis of appropriate time and monetary compensation for claims with merit.
- Settlement negotiation options.

The Architect/Engineer's role is to:

- Immediately provide copies of all claims to the Project Manager.
- Promptly evaluate each claim and forward his written comments to the Project Manager.

The Project Manager's role is to:

- Immediately advise DISD of claims received and when requested to do so by DISD, promptly assess them, evaluate and incorporate the Architect/Engineer's comments with his written assessment of each claim and forward the assessment with recommended resolution and negotiation options to DISD.

#### 8.2.1 Merit Evaluation

Merit evaluation shall assess whether or not the Contractor has a basis for his claim. Merit evaluation shall be performed prior to any entitlement analysis. If a claim has no merit, no further evaluation shall be required. The extent of potential entitlement shall be assessed to determine if there is any apparent contractual basis upon which a contractor may recover.

The Architect/Engineer's role is to:

- Promptly evaluate claims issues and forward his analysis to the Project Manager for incorporation in the Project Manager's report to DISD.

The Project Manager's role is to:

- Conduct merit evaluations, when requested to do so by DISD, and promptly advise DISD of his conclusions and recommendations.

### 8.2.2 Entitlement Analysis

Entitlement analysis shall determine the amount of time and/or money which a Contractor may receive if his claim is determined to have merit.

The Project Manager Shall when requested by DISD:

- Review the Contractor's entitlement request for the appropriate back-up documentation and immediately request any necessary back-up documentation not provided by the Contractor.
- Conduct an entitlement analysis of the Contractor's entitlement request.
- Promptly forward the Contractor's entitlement request with complete back-up to DISD with recommendations for settlement negotiations where appropriate.

The Architect/Engineer's role is to:

- Assist the Project Manager with entitlement analysis.

### 8.2.3 Settlement Negotiation

Settlement negotiations shall arrive at an equitable entitlement agreement between DISD and the Contractor. If, during negotiations, new facts are revealed that impact upon the entitlement, re-evaluation of the request for entitlement shall be performed.

The DISD's role is to:

- Negotiate, with the assistance of the Project Manager, claim settlements with the Contractor.
- Issue a Contract Change Order modifying the Contract to incorporate settlement terms in the Contract.

The Project Manager Shall when requested by DISD:

- Participate in preparation for settlement negotiations and ensuing negotiations upon request from DISD.

The Architect/Engineer Shall when requested by DISD:

- Participate in preparation for settlement negotiations and ensuing negotiations upon request from DISD.

## 9.0 M/WBE PARTICIPATION

### 9.1 Affirmative Action Program

A Minority Business Enterprise shall mean a small business concern as defined by Section 3 of the Small Business Act, as amended, such as a sole proprietorship, corporation, partnership, joint venture or any other business, stocks, assets and/or interests that is owned, controlled and managed by one or more minority persons.

The term Minority shall mean those individuals who are citizens of the United States or Lawful residents of the United States and are members of Black, Hispanic, Native American, Asian-Pacific or Asian-Indian groups who are found to be economically and socially disadvantaged by the Small Business Administration under Section 8(a) of the Small Business Act, as amended.

A Women Business Enterprise shall mean a small business concern as defined by Section 3 of the Small Business Act, as amended, such as a sole proprietorship, corporation, partnership, joint venture or any other business or professional entity in which at least 51% of the business, stocks and/or interest are owned, controlled and managed by one or more women.

Bids opened and not containing required documents consistent with DISD's policy on M/WBE affirmative action, as detailed in the following sections, shall be considered non-responsive and not responsible and thus not accepted.

DISD shall determine whether the bidder's efforts were those that, given all relevant facts and circumstances, meet standards of "Good Faith Effort" or "Waiver" as defined by DISD's M/WBE affirmative action program.

All bidders shall submit the required forms, Schedules and statements with their bids.
For further information or assistance, please contact:

Dallas Independent School District
Facilities Bond Program
3510 S. Beckley Avenue
Dallas, TX 75224
(214) 302-2900
Fax: (214) 372-1630

### 9.2 Policy Statement

It is the policy of DISD to involve M/WBE in all phases of procurement practices and to provide equal opportunities to compete for contracts for construction, provision of professional services, purchases of goods and non-professional services required by DISD.

Pursuant to this policy, all prospective bidders and contractors shall be required to meet the uniform standards set forth by the M/WBE affirmative action program in order to assure a reasonable degree of participation of M/WBE's in the performance of DISD contracts.

DISD's M/WBE Contracting and Purchasing Program, Construction Bid Specification Language and Forms is hereby made a part of these Guidelines and Procedures.

**The Dallas Independent School District**

# TECHNICAL DESIGN GUIDELINES

## Section III: Technical Design Guidelines

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# Section III: Technical Design Guidelines

## Purpose

### Note to the Architect - Engineer

These technical design guidelines have been prepared for your thorough review and application. You will find that the material presented will answer many questions that you and your consultants might have. Generally speaking, all architects and engineers are expected to adhere to these Guidelines; however, it is not intended that they limit the application of the professional's knowledge, experience, innovative design, or that they replace the normal thought process. Should you wish to recommend deviations from these guidelines, a letter to the Division Executive of the Facilities Bond Program stating your reasons for each specific change is required.

The guidelines for all DISD construction projects include the pages provided herein, as well as the memorandums included in the DISD Construction Policies and Procedures and the current DISD Master Specifications. Since the list, as well as the content, of construction policies and master specifications change from time to time, only the outline for each document is included. The DISD staff person responsible for a particular project will provide you with copies of each of the referenced documents upon request.

## Section III: Technical Design Guidelines

### Section A

CAD (Computer Assisted Drafting)

A consideration in the selection of all architect and engineer consultants for the design of buildings and other facilities for the District will be whether or not the consultant has the capability to produce the drawings on a CAD system. The preferred systems for the District is AUTOCAD or CADVANCE, for personal computers, but any system is acceptable if it can produce a "DXF file" on a 3.5" disk, since "DXF" files can be read by the District computers.

The following standards are hereby established for providing of design drawings, completed on AUTOCAD / CADVANCE or other system producing a "DXF" file, to the District:

A.01
Design drawing records: All "record" drawings will be provided to the District both on mylars, and on 3.5" double-sided 1.4MB capacity disks produced on a DOS operating system personal computer.

A.02
Provide acceptable CAD files or "DXF files:" All files on the 3.5" disk shall be AUTOCAD R.11 or in "DXF files" which are readable and usable by CADVANCE V.5.0 or above.

A.03
All project construction drawings must be 100% CAD produced.
Reference files must be permanently attached to the parent.
Blocks (symbols/cells) must be saved with the parent file.
Ascii text file containing layer names and descriptions must accompany all CAD files.
Layering system must allow easy access to "base plan" only configuration.
Provide software to expand compressed files if disc compression is necessary.
Files must not be password protected.

Specifications submittal:
Specifications must be submitted in Microsoft Word V.2.0 or above or Wordperfect V.5.2 or above.

A.04
Layer Standards: AUTOCAD and CADVANCE have 256 layers available for each drawing, each of which may be assigned a name and a color. The following list of layers and colors is approved by the AIA and may be used for all District drawings:

| Number | Color | Name/Usage | Description/Comment |
|---|---|---|---|
| 1 | 1 | SYM-BASIC | Reserved for symbols; save symbols on this layer; architectural floor plan must be on this layer for symbols to be visible. |
| 2 | 1 | SYM-TEXT | Reserved for text associated with symbols. |
| 3 | 1 | SYM-ENHANCED | Reserved for symbols and enhanced graphics |
| 4 | 1 | 4 | User defined. |
| 5 | 2 | A-STBD-2436 | Title block and job name only; place sheet numbers on note layers. |
| 6 | 15 | A-RDME | Read me notes for other users; not to be plotted |
| 7 | 1 | 7 | User defined. |
| 8 | 5 | S-PLCL | Structural column plan. |
| 9 | 9 | S-PLCL-GRID | Structural column grid. |
| 10 | 2 | A-WALL-EXT | Exterior walls including fenestration. |
| 11 | 4 | A-WALL-FULL | Full height interior walls, including stairwells, fire-rated walls, restrooms, plumbing chase walls, electrical rooms, doors, etc. |
| 12 | 12 | A-WALL-PRTL | Partitions to ceiling; walls which do not interrupt the ceiling construction, including relocatable wall panels; doors, etc. |
| 13 | 14 | X-WALL | Walls, doors, and fixtures to be demolished. |
| 14 | 6 | N-WALL | New walls and doors. |
| 15 | 1 | 15 | User defined. |
| 16 | 9 | A-PLFL-FIXT | Fixture plan to include any permanent architectural feature that does not extend to the ceiling; includes cabinets, ramps, platforms, tackboards, etc. |
| 17 | 1 | 17 | User defined. |
| 18 | 13 | A-CLNG-GRID | Ceiling grid. |
| 19 | 1 | 19 | User defined. |
| 20 | 5 | A-PLRF | Architectural roof plan. |
| 21 | 9 | L-PLST | Site plan. |
| 22 | 4 | L-PLST-PROP | Property lines. |
| 23 | 2 | L-PLST-UTIL | Site utilities. |
| 24 | 1 | 24 | User defined. |
| 25 | 12 | L-PLPL | Landscape planting plan. |
| 26 | 1 | 26 | User defined. |
| 27 | 9 | E-POWR | Electrical power plan. |
| 28 | 2 | E-POWR-CRTY | Power circuiting. |
| 29 | 9 | E-DEVC | Electrical devices. |
| 30 | 2 | E-DEVC-CRTY | Devices circuiting. |
| 31 | 9 | E-LGHT-CLNG | Ceiling lighting fixtures. |
| 32 | 2 | E-LGHT-CRTY | Lighting fixtures circuiting. |
| 33 | 1 | 33 | User defined. |
| 34 | 9 | M-HVAC-CLNG | Ceiling mounted diffusers, grilles, etc. |
| 35 | 2 | M-HVAC-DUCT | Mechanical ductwork. |
| 36 | 10 | M-HVAC-EQPM | Mechanical equipment. |
| 37 | 1 | 37 | User defined. |
| 38 | 9 | P-FIXT | Plumbing fixtures. |
| 39 | 2 | P-PIPE | Plumbing piping. |

| | | | |
|---|---|---|---|
| 40 | 1 | 40 | User defined. |
| 41 | 15 | A-PLFL-NOTE | Architectural floor plan notes, schedules. |
| 42 | 15 | A-PLFL-NOTE-ROOM | Room names. |
| 43 | 15 | A-PLFL-ROOM-# | Room numbers. |
| 44 | 15 | A-PLFL-DIMS | Plan dimensions. |
| 45 | 1 | 45 | User defined. |
| 46 | 9 | A-PLFL-DEVC | Architectural ceiling devices, roll-up grilles, ceiling hung screens, maps, mirrors, etc. |
| 47 | 15 | A-PLCL-NOTE | Architectural ceiling plan notes. |
| 48 | 15 | X-PLFL-NOTE | Demolition plan notes. |
| 49 | 1 | 49 | User defined. |
| 50 | 15 | L-PLST-NOTE | Site plan notes; includes only notes to appear on both architectural and mechanical site plans. |
| 51 | 15 | L-PLST-NOTE-ARCH | Architectural site plan notes. |
| 52 | 15 | L-PLST-NOTE-UTIL | Mechanical or utility site plan notes. |
| 53 | 1 | 53 | User defined. |
| 54 | 15 | A-PLRF-NOTE | Roof plan notes; includes only notes to appear on both the architectural and mechanical roof plans. |
| 55 | 15 | A-PLRF-NOTE-ARCH | Architectural roof plan notes. |
| 56 | 15 | A-PLRF-NOTE-UTIL | Mechanical roof plan notes. |
| 57 | 1 | 15 | User defined. |
| 58 | 9 | A-FURN | Furniture plan. |
| 59 | 15 | A-FURN-NOTE | Furniture plan notes. |
| 60 | 15 | A-FIXT-NOTE | Fixture plan notes. |
| 61 | 15 | A-POWR-NOTE | Electrical power plan notes. |
| 62 | 1 | 62 | User defined. |
| 63 | 15 | E-LGHT-NOTE | Lighting plan notes. |
| 64 | 15 | E-LGHT-SCH | Lighting equipment schedule, single line diagrams, and details. (DISD defined.) |
| 65 | 15 | E-DEVC-NOTE | Electrical device plan notes. |
| 66 | 1 | 66 | User defined. |
| 67 | 15 | M-HVAC-NOTE | Mechanical plan notes. |
| 68 | 15 | M-HVAC-SCH | Mechanical equipment schedule, single line diagrams, and details. (DISD defined.) |
| 69 | 15 | P-NOTE | Plumbing plan notes. |
| 70 | 1 | 70 | User defined. |

Layers 71 through 256 are user defined. User defined layers may be assigned names and colors as needed on a project by project basis, except that color 1 is reserved for symbols and color 3 is reserved for selection highlight.

# Section III: Technical Design Guidelines

## Section B

## General Considerations

These guidelines have been developed to assist the Architect-Engineer (A-E) in the development of a quality project in a consistent, efficient and timely manner; incorporating experiences and lessons learned from past building improvement programs. These Design Guidelines have been developed to assist in communicating DISD's desires and requirements with regard to new construction, additions and renovations. Application of the Guidelines to renovation projects will require professional skill and judgment and may require modification with concurrence of DISD on a project by project basis.

The guidelines are not intended to unduly limit or control opportunities for innovative design but rather to assist the project professionals in understanding certain planning requirements, design criteria, and concern regarding reduction of energy consumption.

Nevertheless, whenever the design of facilities varies from the requirements and considerations contained in the Guidelines, the Architect-Engineer shall inform DISD in writing, and DISD will, in turn, approve or disapprove the variance.

DISD will conduct periodic reviews for the purpose of determining compliance with DISD criteria, guidelines and instructions.

A standard project sign will be provided for all major construction projects (See Sample in Appendix).

DISD has a list of acceptable manufacturers for various components (See Index of DISD Construction Policies and Procedures); any item or component not shown in the list will be specified by the Project Architect and/or the Project Engineer.

To conform with environmental compliance, all products specified and incorporated in projects shall be "asbestos free." All pressurized systems and containerized systems shall be C.F.C. free.

# Section III: Technical Design Guidelines

## Section C

## Architectural Criteria

**Considerations during Early Design Phase:**

C.01

The following outlines considerations which should be included in early project analysis presentations. Development of building and site options should be presented in descending order of assumed priority.

1. General Program Analysis

- Recommended relationships of new components to each other.
- Recommended relationship of new components to existing ones.
- Statistics on new and rehab areas (square footage efficiency, etc.)
- Problems in existing facilities in descending order of priority.
- Historic significance of existing structures as may be appropriate.

2. Site Analysis of Existing Conditions

- For school additions, consider sprinklered (fire) vs. horizontal and vertical access, fire lane, and hydrant.
- Traffic (patterns, noise, danger, density of school site); special considerations regarding safety of elementary and kindergarten children; adequate parking.
- Adequate service area.
- Location and size of existing utilities.
- Relationship of school to surrounding neighborhood.
- Easement restrictions.
- Site utilization during construction (contractor considerations, e.g., fence, access, etc.) temporary building location/relocation.
- Location and size of all existing permanent and transportable structures.
- Platting requirements.
- Landscaping requirements.

# Section III: Technical Design Guidelines

## Section D

## Structural Criteria

### General Considerations

D.01
It is not the intent of these guidelines to limit the application of the professionals' knowledge, experience or innovative design. However structural design involving other than conventional foundation and building framing for any school must be reviewed and approved by DISD.

D.02
Use of precast structural concrete, pre-stressed or post tensioned concrete, and systems utilizing excessive spans, or components/procedures unusual to the local building trades must be reviewed with and approved by DISD.

D.03
Design loading and deflection criteria shall, as a minimum, comply with requirements of the latest edition of the City of Dallas Building Code. (Design live loads not less than 20PSF.)

D.04
Structural steel members should be designed in accordance with A.I.S.C. specifications for Design, Fabrication and Erection of Structural Steel for Buildings, the latest edition.

D.05
Reinforced concrete members should be designed in accordance with the American Concrete Institute, A.C.I. 318.

D.06
Where conflicts occur between the Building Code and the A.I.S.C/A.C.I. specifications, the Building Code shall govern.

D.07
All roofs should be designed with sufficient slope or camber to assure adequate drainage, taking into account ultimate long time deflection. Structure shall be designed with a slope of 1/4" per foot; roof slope shall not be provided merely by sloped insulation.

D.08
Very careful consideration should be given to the effects of the expensive soils found in the Dallas area. Foundation design should be based on the Geotechnical Engineer's Report and the DISD memo dated December 1, 1984, for foundation design (See index of DISD Construction Policies and Procedures). Slab on grade foundations will be approved by DISD only under the most unusual of circumstances. Examples of schools constructed with slabs on grade, and their subsequent true "costs" will be provided upon request.

D.09
In designing additions to existing schools, consider the potential differential settlement between the building; particularly where new floors are contiguous to existing ones.

D.10
The structural engineer must carefully coordinate and account for the potential effect of anticipated deflection of the structural system as related to connection of non-structural walls, partitions and mechanical equipment. Minimize deflections.

D.11
The structural engineer must coordinate the architectural and mechanical requirements of the project to assure adequate clearances, support, and proper dimensioning. Close attention should be given to the structural requirement imposed by mechanical equipment for openings, penetration of structural members, inertia pads, equipment weights, vibration and water piping of all types. Provide space in hallways for fan-powered mixing boxes and all piping.

D.12
The structural engineer should review and coordinate the architectural drawings to assure provision has been made, as required, for lintels, shelf angles, floor depressions including those for thick-set ceramic tile, water proofing, miscellaneous framing members and anchors, properly sized to carry the intended load.

D.13
Consideration should be given to planned concentrated loads.

D.14
Avoid load bearing walls.

## Section III: Technical Design Guidelines

### DIVISION 1

1.01
The boundary topographical survey and soil engineering investigation report should be requested by the architect/engineer as soon as possible to assure the project moving forward in a timely manner. The proposal - agreement forms for the services should be completed with available information and submitted to DISD to secure the appropriate services.

1.02
Any asbestos found in an existing building should be documented in writing to DISD (Refer to DISD memo dated June 18, 1987) or latest version. See Index of DISD Construction Policies and Procedures.

1.03
Where a project involves renovation or addition to an existing facility, the Architect/Engineer is responsible for verification of all existing conditions.

1.04
If a survey firm has used the CAD system, provide DISD, in addition to mylars and other copies, a 3.5" disk with AUTOCAD/CADVANCE file, or DXF file, for use in DISD CAD system.

## Section III: Technical Design Guidelines

### DIVISION 2 - SITEWORK

*References - EARTHWORK*
*ASTM D 698 - Moisture-Density Relations of Soil.*
*ASTM D 1556 - Density of in Place Soil by Sand-Cone Method.*
*ASTM D 2167 - Density of in Place Soil by Rubber Balloon Method.*
*ASTM D 2216 - Laboratory Test of Soil Moisture Content.*
*ASTM D 2922 - Density of in Place Soil by the Nuclear Method.*

*References - DRILLED PIERS*
*Specifications of the Association of Drilled Shaft Contractors.*
*American Concrete Institute (ACI)*
1. *ACI 336.1: "Standard Specification for Construction of End Bearing Drilled Piers"*
2. *ACI 336.3: "Suggested Design and Construction Procedures for Pier Foundations"*

2.01
DISD's project budget includes all site development costs incurred, including parking, curbcuts, drives, paved play areas, walks and sidewalks at the street unloading zone, landscaping, and exterior furniture and equipment. Street, curb, and gutters and utility extension beyond the immediate site are generally not included in the project budget.

2.02
It is therefore essential that economy of means be a prime consideration in designing site improvements such as pavements, walks, utility distances, drainage and other elements affected by layout and location.

2.03
There must also be concern for neighborhood scale, visual impact, orderliness, aesthetics of proportion and color, good drainage, the safety and comfort of the students, and the satisfaction of parents and constituents of the school district.

2.04
To conserve land available for green areas, recreational space, and future expansion, consider consolidation of drive, parking and service drives.

2.05
Service drives should accommodate long wheel base trucks approximately 50-60 feet long, including appropriate turning radii. Provide parking for 2 service vehicles near loading dock.

2.06
Consider wheel load for pavement design to be 16,900 pounds. Pavement design should be based on recommendations of the soils engineering report. A reinforced concrete apron drive at transition with the street should be provided. All driveways and parking shall be Portland Cement reinforced concrete.

2.07
Establish top elevations of manhole covers and cleanouts flush with pavements; and in grass areas at an elevation which will allow unobstructed mowing and which will assure good positive drainage.

2.08
At street unloading zones, where permitted, provide for reinforced concrete sidewalk continuous with curb to permit stepping directly from an auto to an all weather surface.

2.09
Provide hard surface outdoor play area (50' x 100') of concrete. Two basketball goals, striping for basketball and volleyball. Informal play area - one set football/soccer goals and one softball backstop. At High Schools and Middle Schools, provide tennis courts.

2.10
Paved play areas at elementary school sites must not be contiguous with vehicular traffic areas. If in close proximity, an adequate barrier should be provided.

2.11
Bicycle racks

- Bicycles are to be accommodated at each school. (Quantity to be determined).
- Racks are to be set on a paved surface and be immediately accessible to the sidewalk system.
- Sidewalk fence gates or a special gate may be used to gain entry to the school grounds.
- Avoid locating the racks adjacent to vehicle drives or parking. Because of the somewhat messy appearance, racks are not desirable immediately in front of the school, but would be better located to one side. It is desirable to have the racks in view of a classroom window.

2.12
Careful attention should be given to planning the location and detailing of utility service entrances and service equipment such as chillers, cooling towers, stacks, grease traps, manholes, cleanouts, hose bibbs, valves, service vaults, transformers, gas and water meters. A successful design requires a careful balance of aesthetics, functional operating features and cost.

2.13
Provisions for access by the handicapped is required including provisions and unobstructed entry into the building from parking area or point of drop off. For specific requirements, refer to Vernon's Civil Statutes, Section 7, Article 601b, and the American Disabilities Act (ADA).

2.14
Flag pole(s) should be located near and assist in identifying the principal entrance to the building. Flag pole height should be appropriate to the building scale. A taped, ground set, aluminum pole, for manual operation is acceptable. If design is such that consideration is given to locating the flag pole at other than the principal entry, such as a courtyard, obtain and document DISD consent. Flag pole should be furnished with one rope, but with two sets of clips to facilitate flying both U.S. and Texas flags at once.

2.15
When natural drainage is interrupted by drives or paved areas other than walks, water should be diverted by swale, regrading or piped drainage as determined by cost comparison, value and analysis.

2.16
Transportable buildings continue to be an alternative to accommodate increases in student enrollment and requirements for reduction in the ratio of number of students per teacher. Therefore, sites should be planned to accommodate transportable buildings, even after completion of a new school or new addition. Considerations should include the relationship with the permanent building and its circulation: exits, toilets and custodial spaces, visual impact upon the site and neighborhood, code requirements, utility service location, fire protection, including fire lane and hydrant, parking requirements, access from arrival points, impact on ancillary services such as food, library, and recreation. The route of movement of the transportable buildings is an important consideration.

2.17
Layout of drives and parking areas should be in accordance with recognized standards for parking space and aisle dimensions. Circulation patterns should be simple and non-confusing. Entrances and exits into parking areas should be located so as not to create a traffic hazard. Consider a 6" concrete paved access fire lane required by Dallas Fire Department.

2.18
Avoid routing storm sewer lines under the building structure.

2.19
Provide metal bollards at back of dumpster slab. Provide area 10' x 20' for recycling dumpster and trash dumpster. Dumpster slab should have area drains draining into the city sanitary sewer system. If building has excavated underfloor crawl spaces, these spaces should have drainage provided into the city system.

**Landscaping**

2.20
DISD's project budgets for new facilities and additions include costs related to landscaping. Landscaping may also be a part of certain renovation projects.

2.21
Scope of the landscaping should be initially determined by the Architect-Engineer during the schematic design phase based on the Preliminary Project Budget and presented to DISD for review and approval. The scope of the landscaping shall be finalized during the design development phase and be included in a detailed estimate of construction cost presented to DISD.

2.22
The City of Dallas has specific requirements related to landscaping in the Dallas Development Code. Include summary table of "point system" requirements to include existing, new and total.

2.23
Specific Use Permits (SUP) are not required and shall not be requested except for new facilities on new sites.

2.24
Landscaping includes plant material and irrigation.

2.25
Where landscaping is being provided at an existing campus (i.e., an addition) the plant material selection should generally conform to complement existing plant material.

2.26
Use of native drought resistant plant material is encouraged. Plant material requiring excessive irrigation or maintenance should be avoided.

2.27
Provide either hose bibbs no more than 100' apart or underground water line with quick-couplers in boxes with lockable covers at grade level. If compliance with landscape ordinance for existing parking lot requires moving of an existing parking lot so as to provide a 10' buffer strip, it is DISD's policy to request a variance form the Dallas Board of Adjustment. Parking and loading areas - per city code.

2.28
The consulting engineer shall provide a written statement at the design development stage of the project to the effect that the architect has provided easy access and adequate space for installation and servicing of all mechanical equipment, including air handlers, otherwise the statement shall indicate changes which are required in space allocation.

2.29
Provide storage building for exterior maintenance equipment. Provide with concrete slab, ventilation, separate from the main building.

2.30
If an addition results in an enclosed courtyard, provide drainage analysis, provide for primary and overflow drainage.

## Section III: Technical Design Guidelines

### DIVISION 3 - CONCRETE

*References - CONCRETE*
*American Concrete Institute:*
*ACI 211.1, Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete.*
*ACI 214, Recommended Practice for Evaluation of Strength Test Results of Concrete.*
*ACI 301, Specifications for Structural Concrete for Buildings.*
*ACI 304, Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.*
*ACI 305, Hot Weather Concreting.*
*ACI 306, cold Weather Concreting.*
*ACI 318, Building Code Requirements for Reinforced Concrete.*
*SP15, Field Reference Manual, Specifications for Structural Concrete for Buildings with Selected ACI and ASTM References.*

3.01
Use of exposed concrete as a "finish" material must have prior written approval from DISD.

3.02
Standardize bar grades, sizes and lengths as far as possible. Reinforcing steel to be new billet steel of domestic manufacture.

3.03
Beam and girder sizes and spacings should be uniformly chosen.

3.04
Maintain column cross-sectional areas constant for at least two stories. When necessary, change column thickness only with an inside face setback.

3.05
Provide the maximum reuse of forms for all cast-in-place concrete work. This requires repetition of design features throughout the project.

3.06
Minimal dimensions of column and beam sides should be in multiples of 2 inches.

3.07
Provide keyways at all construction joints and include continuous water stops wherever subjected to hydrostatic pressures.

3.08
Slope the top of all exposed concrete surfaces and include drip grooving underneath all cantilevered leading edges.

3.09
Curing compounds used at existing school sites should contain not more than 10% solvents.

3.10
All below grade exterior wall pipe penetrations shall be made with a special cast iron flange to mechanical joint wall castings of matching length with integral intermediate flange. Sleeve and curb all floor slab openings.

3.11
Exposed concrete grade beams shall not exceed 1'-0" above finished grade.

## Section III: Technical Design Guidelines

### DIVISION 4 - MASONRY

*References - MASONRY*
*ASTM C 67 - Sampling and Testing Brick and Structural Clay Tile*
*ASTM C 150 - Portland Cement*
*ASTM C 216 - Facing Brick*
*ASTM C 270 - Mortar for Unit Masonry*
*ANSI A41.1 - Building Code Requirements for Masonry*

4.01
When face brick is to be used, at least two that are equal should be specified in lieu of specifying by allowance. Also, consideration should be given to compatibility of the brick with other structures on campus as wells as the surrounding neighborhood; durability, and availability for current projects as well as future additions. When attempting to match an existing brick, the manufacturer and manufacturer's number of the matching brick should be specified. Brick selection must be approved by DISD.

4.02
Use tooled/concave joint on brick.

4.03
Avoid designs requiring special shapes or cuts of brick.

4.04
All masonry units shall be above grade.

4.05
Masonry roof parapets shall have their roof face protected.

4.06
All masonry walls shall have expansion/contraction joints.

4.07
Joints for expansion, contraction and building movement shall be sealed to prevent weather and water from penetrating to the interior of the building. All vertical and horizontal joints shall be drained to daylight above all horizontal surfaces. There shall be both a primary (architectural) weather seal and a secondary weather seal where water and moisture could penetrate the wall.

4.08
Through wall flashing shall be provided at wall caps, window heads, shelf angles, base bearing, etc.

4.09
Masonry anchors to structured steel framing shall be of flexible design, i.e., wire tie strap anchors, corrugated metal ties are not acceptable.

4.10
Provide appropriate through wall flashing and appropriate "weep" holes to provide drainage at cavity walls.

4.11
Avoid masonry units with high metallic content to minimize efflorescence.

## DIVISION 5 - METALS

*References - STRUCTURAL STEEL*
*American Institute of Steel Construction, AISC:*
1. *AISC Manual of Steel Construction.*
2. *Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.*
3. *Code of Standard Practice for Steel Buildings and Bridges.*
4. *Structural Joints using ASTM A325 or A490 Bolts.*

*References - STEEL JOISTS*
*Steel Joint Institute, SJI:*
1. *Standard Specifications for Open Web Steel Joists, K-Series; and Standard Load Table, Open Web Steel Joists, K-Series.*
2. *Recommended Code of Standard Practice for Steel Joists and Joist Girders.*

*References - STEEL DECK/COLD FORMED METAL FRAMING*
1. *Steel Deck Institute (SDI), Specifications and Commentary for Steel Roof Deck.*
2. *American Iron and Steel Institute (AISI), Specification for the Design of Cold-Formed Steel Structural Members.*

*References - METAL FABRICATIONS/RAILINGS*
*ASTM A 47 - Malleable Iron Castings.*
*ASTM A 53 - Welded and Seamless Steel Pipe.*
*ASTM A 501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.*
*AWS D1.1- Structural Welding Code*

5.01
Structural steel shall be of domestic manufacture, with rust inhibiting primer and paint finish.

5.02
Gauge of metal roof decking shall be specified and material specified as hot dip galvanized. Provide proper detailing to limit the amount of exposed steel appearance.

5.03
Avoid designs requiring full moment connections.

5.04
Select beams for economy of section, however, maintain web thickness as necessary to facilitate detailing.

5.05
Metal decking for concrete slab form should be of sufficient gauge to support concrete placement without buckling or deforming from wheelbarrow or other such traffic.

5.06
Flutes of metal decking supporting rigid insulation should be of proper size to accommodate the span capability of the specified insulation.

5.07
Miscellaneous metal fabrications should utilize readily available local sections. Do not use aluminum, copper, brass (or other metals that have salvage value) in exterior applications.

5.08
Exterior ferrous metals used for handrails, ballards, bike racks are to have rust inhibited primer and paint finish. Exterior ferrous metals that are part of the building elements are to have low maintenance coatings.

## Section III: Technical Design Guidelines

### DIVISION 6 - WOOD AND PLASTICS

*References - ROUGH CARPENTRY, FINISH CARPENTRY, MILLWORK*
*APA - Plywood Construction Guide.*
*AWPA C20 - Structural Lumber, Fire-Retardant Treatment by Pressure Processes.*
*AWPA C27 - Plywood, Fire-Retardant Treatment by Pressure Processes.*
*PS1 - Construction and Industrial Plywood.*
*PS20 - American Softwood Lumber Standard.*
*NFPA - National Design Specification for Stress Grade Lumber and its Fastening.*

*Quality Standards: Perform finish carpentry work in accordance with AWI Quality Standards.*
1. *Standing and Running Trim: AWI Section 300.*
2. *Shelving: AWI Section 600.*
3. *Miscellaneous work: AWI Section 700.*

- *Quality Standards: Provide millwork in accordance with Architectural Woodwork Institute (AWI) Quality Standards.*
- *Casework and countertops: AWI Section 400 A, B, and C.*

6.01
Fixtures and Casework - Use wood veneer (faces and edges) with transparent finish where applicable. When using channel bracketed shelving, be sure the weight and size of the channels and brackets are commensurate with the loading to be applied on the shelves and that partition construction, bracing on top, and holding provisions are adequate.

6.02
Casework: Use instead of mill work when a casework item is available. Good quality required (45 pcf) particle board for doors, shelves, etc. Counter tops will be plywood, not particle board, and hinges shall be installed with pressure.

6.03
Storage shelving - Provide utility grade (painted) wood shelving in the following areas:
- Book rooms.
- Records office: administration.
- Custodial.

## Section III: Technical Design Guidelines

### DIVISION 7 - THERMAL AND MOISTURE CONTROL

*References - ROOFING*
*FM - Roof Assembly Classifications.*
*NRCA - Manual or Roof Maintenance and Roof Repair.*
*NRCA - Roofing and Waterproofing Manual*
*UL - Fire Hazard Classifications.*

*References - ROOF FLASHING AND SHEET METAL*
*SMACNA - Architectural Sheet Metal Manual*

7.01
Unwanted sound transmission between classrooms and other spaces is an important concern for DISD. Mechanical rooms should be sound isolated from adjacent space. Avoid, where possible, locating a mechanical room adjacent to a classroom.

7.02
Provide for sound isolation of classrooms. For sound control use partitions from floor to minimum 1'-0" above ceiling (3-1/2" metal studs with one layer 5/8" gypsum board each side) with 1-1/2" insulation. (Non-fire rated walls.)

7.03
Architect/Engineer should discuss with DISD at initiation of project use and extent of two layers 5/8" gypsum board in areas likely to be subjected to vandalism, i.e. corridors.

7.04
Where an upper floor level extends over open porches or otherwise exposed to the weather, insulation should be provided to protect the conditioned space above.

7.05
Roof decks, coverings, flashing and roof drainage constitute major maintenance, repair and replacement expenditures. Avoid building designs with multiple roof levels or changes in levels, intersections of expansion joints and penetrating walls, clerestory window and equipment curbs of inadequate height, roof deflections that cause slopes away from drainage, large areas of sheet drainage onto walls, unsuccessful detailing or construction of roof edge gravel stops and undersized drains.

7.06
Design buildings to provide less complicated, simple roof geometry; roof decks having appropriate load carrying capacity, insulated so that decks will have some protection from thermal shock and comply with energy conservation considerations; a 4 ply tarred felt and coal-tar bitumen system with 10 year warranty.

7.07
Copper and aluminum flashings and gravel stops are to be avoided due to excessively high cost and the problems related to vandalism.

7.08
Drainage of roofs shall be accomplished with appropriately placed roof drains and overflow scuppers rather than merely sheet flow to scuppers or "over-the-side" onto walls. Avoid parapets and pitch pans; use alternate details. Steep pitched roofs only when necessary or appropriate will be considered; design must be submitted for review and approval. No light-weight concrete roof decks will be allowed.

7.09
Roof assemblies shall consist of steel roof deck topped with one or more layers of rigid insulation properly fastened, covered by a 4 ply coal tar pitch built-up roof. When standing seam metal roof is used, materials test firm shall inspect all flashing joints, and seams; rigid non-hygroscopic extruded polystyrene insulation shall be fastened to the underside of the roof to provide R-20 roof assembly.

7.10
Roof assemblies shall have UL class A fire rating and FM I-90 wind uplift rating.

7.11
Where roof-mounted equipment is unavoidable, provide "Carey Tred" or equal walkways from the point of roof access to units requiring periodic service.

7.12
Mechanical equipment on the roof, if unavoidable, should be designed to set on a curb, or to be supported by posts or columns placing the bottom of the equipment to a minimum of 18 inches above roof level. Provide curbs for roof mounted exhaust fans.

7.13
Test cuts should be performed only where there is reason to suspect that less than proper installation procedures have been used or materials have been shorted.

7.14
Materials used for patching and repairing existing roofs shall be compatible with existing materials (i.e., pitch, asphalt).

7.15
As a guide for the selection of the roofing system, consider the following:

| Slope and Type | Manufacturer and Spec. Notes |
|---|---|
| 0 to 1/4 in 12<br>Recommended: 1/4" max; 1/8" min. (coal tar pitch with gravel)<br>No substitutions | Koppers - 420-4,<br>as required by deck material<br><br>Allied Signal - RP-51,<br>as required by deck material |
| 1/4 in 12 to 1/2 in 12<br>(Steep roof asphalt & glass felt with granule surface)<br>No substitutions | Siplast Paradiene 20/30 (FR),<br>as required by deck material<br><br>Genstar Flintlastic FR,<br>as required by deck material |
| 1/2 in 12 to 1 in 12<br>(Steep roof asphalt & glass felt with granule surface)<br>No substitutions | Siplast Paradiene 20TG/30TG (FR)<br><br>Genstar Flintlastic FR,<br>as required by deck material |
| 1 in 12 to 6 in 12<br>(Steep roof asphalt & glass felt with aluminum asphalt surface coat or granule surface or metallic surface) | Siplast Veral,<br>as required by deck material<br><br>Genstar Flintlastic FR<br>as required by deck material |

7.16
Listed materials, when part of an acceptable roofing system, shall meet the requirements of the material standards specified.

7.17
Comply with acceptable roofing system manufacturer's recommendations for component roofing system materials not listed herein.

Bitumen:
Asphalts:

(1) Low slope: ASTM D 312-64 Type I
(2) Steep: ASTM D 312-64 Type III
(3) Special Steep: ASTM D 312-64, Type IV
(4) Coal Tar Bitumen, ASTM D 450, Type III, Low Fume

Coal Tar Pitch: ASTM D 450-41, Type A

Felts:
Tarred felts: ASTM D 250-68, 15 lbs. perforated.
Base sheet: Asphalt saturated and coated organiz felt, ASTM D 2626-69T, Type I, (No. 43).
Asphalt coated glass fiber base sheet, ASTM D 4601
Coal tar impregnated glass fiber, ASTM D 4990
Coal Tar saturated organic felt, No. 15: ASTM D 227-56.

Bleeder Strip:
High strength, glass reinforced Kraft paper.

Insulation:
Owens-Corning, Fiberglass insulation board in standard sizes.
Johns-Manville Fesco perlite, mineral wood board, in standard sizes.

Moisture Relief Vents:

Luxsuco, aluminum or Telmark #1B-2".

System Guarantees:
10 year NDL warranty shall be provided for all roofs.

7.18
Attic spaces (especially large spaces such as those under sloping roofs) should be semi-conditioned to prevent freezing of water or sprinkler piping.

7.19
Provide internal ladders to all roof areas.

## Section III: Technical Design Guidelines

### DIVISION 8 - DOORS AND WINDOWS

*References - STEEL DOORS AND FRAMES*
*NFPA 252 - Standard Method of Fire Tests for Door Assemblies.*
*SDI-100 - Recommended Specifications - Standard Steel Doors and Frames of Steel Door Institute.*
*SDI-105 - Recommended Erection Instructions for Steel Frames.*
*UL 10B - Fire Tests of Door Assemblies.*

*References - WOOD DOORS*
*NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors," of National Wood Window and Door Association (NWWDA).*

*AWI Quality Standard: "Architectural Woodwork Quality Standard," including Section 1300 "Architectural Flush Doors," of Architectural Woodwork Institute (AWI for grade of door, core construction, finish, and other requirements exceeding those of NWWDA quality standard).*

*References - HARDWARE*
*BHMA 1301 - Materials and Finishes.*

**Doors, Windows, Louvers**

8.01
Door height shall be 7'0" typically.

8.02
Comply with applicable provision of N.F.P.A., including installation, where applicable (for required label construction).

8.03
At exterior entrances use steel solid metal doors and frames. Aluminum is unacceptable for use at entrance locations. Glazing adjacent to and in exterior entrances should be polycarbonate sheet, Lexan preferred, to reduce vandalism.

8.04
Plastic laminate is not an acceptable finish for interior doors, edges are to be wood, with applied paint, stain, or varnish finish. Wood veneer shall be hardwood with transparent finish.

8.05
Use solid core (particle board 28 to 32#/c.f.) for all wood doors and thickness not less than 1-3/4 inches.

8.06
Stops for glass lights, wood louvers, etc., should be capable of being removed and reinstalled, using vandal proof fasteners.

8.07
Where weatherstrips, light seals, or sound seals are required, the details should so indicate the devices.

8.08
Aluminum window glazing systems are to have an anodic or paint system applied to resist deterioration.

8.09
Fill-in of window walls of existing buildings should use a product similar to MAPES Industries porcelain on aluminum architectural building panels with 2.25" polystyrene core (R-11.97) or equal. (As approved by DISD).

8.10
Glass adjacent to and within areas subject to human impact, and where required by code, must be tempered, or polycarbonate glazing must be used.

8.11
Operable windows (min. 1 per exterior classroom) should be single hung vertical sash (horizontal sliding is acceptable). Awning, hopper, pivot or crank type window units are not acceptable. Screens are not required.

8.12
When old, worn out wood windows are to be repaired or replaced, they should be replaced with single glazed aluminum frame units, or repaired. (For choice of these two actions, see Construction Policy and Procedures). Finish and design to be compatible with existing windows.

8.13
Use item by item specification instead of allowance.

8.14
For additions, interface properly with existing, if possible.

8.15
For new schools, consider keying for future additions.

8.16
Window glazing should be 1/4" thick, clear polished plate.

8.17
Where closers are required, avoid concealed type due to increased maintenance problems.

8.18
Use all threaded screws for edge mounted butt hinges.

8.19
For wrap around hinges and for closers and where possible, for other items, use through-bolting instead of screw fastening.

8.20
Butts and Anchor Hinges
a. All butts to be five knuckle.
b. All butts on exterior doors and on storage rooms, library, kitchen, administrative suite opening out to have non-rising pins.
c. All butts on doors with door closers to have ball bearings.
d. All doors over 3'2" wide to have 5" butts.
e. All doors over 8'0" high to have 2 pair butts.
f. Butts will be sized for thickness of door according to manufacturers' recommendations.
g. All anchor hinges to be of one piece construction.

8.21
Door closers
a. Check code requirements - school corridor to occupied space.
b. All closers to be of one manufacturer.
c. All closers to be mounted with sex bolts.
d. All exterior doors to have closers mounted on the inside of the door with parallel arm or top jamb mounting.
e. All interior doors with closers must have the closers mounted on opposite side of public area.
f. All exterior and high frequency use doors to have non-handed closers with full spring adjustments allowing on the door adjustment; power range size 2 through 6, along with back check feature. All other closers required on the project to be non-handed and sized according to the manufacturers recommendations. No concealed closers are to be used, except for double-acting floor closers. Spring hinges are not acceptable.

8.22
Exit Devices & Mullions
a. All exit devices to be mounted with sex bolts.
b. All exit devices to be approved rim devices.
c. Selected exit doors to have removable mullions. (Verify locations).
d. If at all possible, all pairs of doors requiring exit devices shall have removable mullions. Main delivery area should have removable mullion.
e. All mullions to have stabilizers.

8.23
Locksets, Latchsets, and Dead locks shall be Schlage, Russwin, with Best removable cores.
a. All locksets, latchsets, and dead locks to be of mortise style ANSI 156.2 series 1000, Grade 2.
b. All locksets, latchsets, and dead locks to have wrought boxes for installation behind strikes.
c. All exterior handles to be fixed to spindles, preventing loss of security.
d. ADA Requirement: no knobs will be used in any new work; only handles.
e. Type of cylinders to be determined prior to bidding.
f. All exterior door and mechanical room/equipment door locks and cylinders to be "Best" locks or "Best" cores.

8.24
Pivots and Floor Closers
a. All doors 8'5" and under to have one intermediate pivot.
b. All doors over 8'6" tall to have two intermediate pivots.
c. Floor closers are to be used on double action doors only.

8.25
Miscellaneous
Each project to have a key control system that will allow for at least a 50% expansion.

Provide weatherstrips, drips, and thresholds at all exterior doors.

8.26
General

a. All wood doors or hollow metal doors with push plates or exit devices are to have kick plates or armor plates.

| | |
|---|---|
| Single doors | 1-1/2" less width of door |
| Pair doors | 1" less width of door |

b. All wood or hollow metal frames to have silencers.

| | |
|---|---|
| Single doors up to 8'0" | 3 each |
| Single doors over 8'0" | 4 each |
| Pair doors | 4 each |

c. All label door hardware to meet all Underwriter Label requirements.
d. All pairs of Label doors with overlapping astragals must have coordinators.

8.27
Finishes

a. All touch bars on exit devices to be stainless steel.
b. All hardware on wood, plastic or hollow metal doors to be stainless steel or brushed aluminum.
c. All butts to be stainless steel, US 26 or US 32 also. Match existing hardware where addition.

8.28
Holders

a. Exterior Floor Types shall be made of cast bronze material and furnished with steel studs and machine screw stabilizers in expansion shields.
b. Exterior Overhead Type shall be made of heavy architectural bronze construction; the sliding member in channel shall be bronze and have accessible adjustment screw to regulate hold open tension. Channel must be applied to the door by sex bolts.
c. Interior Floor Type shall be made of forged bronze body with oblong mounting slots to provide on-site adjustability. (Do not use hold opens on rated doors with closers).

8.29
Stops

a. Floor Type
   1. Shall be made of cast bronze or brass with a solid base and fastened to the floor.
   2. Special screw studs shall extend through the rubber into top of housing to prevent removal of rubber bumper.
b. Wall type
   1. Shall be made of brass or bronze with a high grade rubber bumper securely held to mounting backplate; where mounted to gypsum wall board provide adequate mounting reinforcement. If mounted to gypsum wallboard only, instead of to stud, mounting must be reinforced.
c. All above items to be of one manufacturer.

**General Hardware Considerations**

8.30
The following should be provided:
a. 3 Grandmaster keys
b. 9 Master keys
c. 2 keys per lock or cylinder
d. Lockable key cabinet of storing 125% of the keys furnished.
e. All locks and cylinders to be provided with "Best" removable cores.

8.31
Classrooms shall be keyed separately.

8.32
All kitchen doors keyed alike with removable key cores.

8.33
Generally, all exterior entrances to lobbies, corridors and stairs to be keyed alike.

8.34
If doors are provided, group toilet areas shall have keyed locks and shall be keyed alike to mechanical equipment rooms and custodial areas.

8.35
Smaller rooms, with locks opening into larger rooms shall be keyed alike with the locks for the larger room.

8.36
The Principal's Office, secured storage, kitchen, and the audio/visual storage room at the Media Center may be opened only by the individual lock keys and the Grandmaster keys. These locks shall not be passed by the Master keys.

8.37
Vault door and frame 2HR rated construction. Provide smoke seal and threshold. Provide deadbolt lock, keyed separately.

8.38
Each project will probably have certain unique situations or arrangements which may require minor deviation from the above. Therefore, when the proposed hardware-keying schedule is prepared by the Architect and Hardware Supplier, notify DISD and a review meeting will be scheduled.

8.39
Although not a part of the building lock and keying system, attention is called to the fact that all teachers' cabinets are to have locks and should be keyed separately and master locked.

8.40
It is quite important that the receipt of all keys by the school Principal or other designated DISD personnel be carefully documented. Have the Contractor prepare an itemized key list in complete detail with the following: a statement that the keys were turned over, the Contractor's signature, a line stating that the keys were received and the receiver's signature. Copies of this list should be retained by the Contractor and receiver and a copy sent to the Architect and DISD. Keys should be identified with tags corresponding to the approved room number designation.

**DISD Lock Policy for Construction Specifications**

8.41
All door locks, lock cylinders, construction cores, and final cores shall conform to the following:

a. Provide all door locks, lock cylinders, construction cores, and final cores. All door locks or cylinders shall be provided with Best removable cores. Install all door locks, lock cylinders, and construction cores. DISD Maintenance shall contact the BEST lock distributor three months before the scheduled completion date of the project to provide them keying instructions, and pick up the final lock cores from the BEST distributor in sufficient time to remove the construction cores and replace them with the final cores not later than one week after accepting occupancy of the school or building. DISD Maintenance will deliver the construction cores to the contractor in such condition that the contractor may return them for credit or use them on another project.
b. It shall be the responsibility of DISD Maintenance to unlock the school or building, or to make other arrangements, to allow any representative of the General Contractor or Authorized Sub-Contractor to enter the building for completion of all work remaining to be accomplished after the building has been occupied. Once the final lock cores have been replaced by DISD Maintenance, DISD assumes primary responsibility for security of the building and its contents.

## DIVISION 9 - FINISHES

9.01
Gypsum board partitions around shower areas, wash rooms and toilet rooms are unacceptable. Avoid glass (or plastic) shower enclosures.

9.02
Where budget permits, the use of maintenance free materials and surfaces is encouraged.

9.03
Student toilet, shower, dressing and locker rooms must be designed for durability, ease of cleaning, simplicity of maintenance, and repair.

9.04
Ceiling material in kitchen, storeroom, and cafeteria must be acceptable to the Dallas Health Department. Provide access to firestat on kitchen exhaust hood. No exposed piping ducts.

9.05
Tape and float only behind lockers, where applicable.

9.06
Double layer gypsum board should be provided in locations subject to potential vandalism, i.e., corridors, labs, stairs, etc.

9.07
Floors, acceptable but not limited to:

| | |
|---|---|
| **Elementary Schools** | |
| Classrooms, Primary | |
| Pre-Kindergarten, Kindergarten, 1st, 2nd, 3rd, and Primary Age Special Education Room) | Carpet, except ceramic tile or VCT will be applied in front of the sink counter unit, lavatory and the entry way to restrooms. |
| | |
| Classrooms, Intermediate | |
| (4th, 5th, 6th, and Special Purpose Rooms) | Vinyl Composition Tile (VCT) |
| | |
| Elementary Schools | |
| Media Center | Carpet |
| Offices, Lounges | Carpet |
| Restrooms/adjacent to classrooms | Ceramic Tile |
| Restrooms off corridor | Ceramic Tile |
| Kitchens | Quarry Tile |
| Cafeteria | VCT |
| Corridors | VCT |
| Entryways | Quarry Tile |
| Gymnasium | Hardwood |
| Platforms (Stages) | VCT |
| | |
| **Secondary Schools** | |
| Secondary Schools | |
| Classroom and Corridors | VCT |
| Laboratories, science, and others | VCT |
| Gymnasiums | Hardwood |
| Offices, Media Center and Lounges | Carpet |
| Kitchen | Quarry Tile |
| Stages - High School | Softwood-stained black |
| Stages - Middle School | Hardwood |
| Auditoriums | Sealed concrete<br>Carpet aisles and orchestra |
| | |
| General | |
| Mechanical Rooms | Sealed Concrete |
| Under drinking fountains | Ceramic Tile |
| Under kilns | Ceramic Tile |

9.08
Walls and Partitions, acceptable but not limited to:

| | |
|---|---|
| Classrooms and Instruction and Kindergarten | Vinyl covered "tackable" over gypsum wallboard, Concrete Masonry Unit (C.M.U.) |
| Corridors | Multilayered gypsum board, plastic laminate panel, or C.M.U. ,plastic laminate |
| Toilets, Kitchen, Custodial, Gym Dressing Rooms, Showers | C.M.U., multi-layered gypsum board (water resistant) ceramic tile full height of wall, glazed CMU |
| Cafeteria | C.M.U., multilayered gypsum board, plastic laminate panel |
| Faculty and Administrative Restrooms | 4' Wainscot ceramic tile |
| Clinic , Administrative Offices | Gypsum wallboard, C.M.U., plaster |
| Stages | C.M.U., multi-layered gypsum board. |
| Shops | C.M.U. painted with vitreous coating if required. |
| Labs | Multilayered gypsum wallboard or C.M.U. |
| Stairs | C.M.U., multilayered gypsum wallboard |
| Gymnasium | C.M.U. with acoustical properties at appropriate heights |

Vinyl wallboard shall not be specified without prior approval of location of use by DISD Facilities.

9.09
Ceilings

| | |
|---|---|
| All areas except kitchen | 2' x 2' with mineral board in exposed tee configuration |
| Kitchen areas | 2' x 2' vinyl faced - washable ceiling |

9.10
Ceiling heights

| | |
|---|---|
| Classrooms | 9'0" minimum |
| Large areas | 14'0" maximum |
| Gymnasiums | 20'0" clear |

9.11
Colors for above finishes, including paints, casework, toilet partitions, flooring, doors and frames, etc. should be gathered and selected as soon as possible. Presentation of these colors should then be made for approval to DISD. Approved color board is to be used by DISD for furniture and equipment selection. Epoxy paint is allowed on "high use" surfaces. Oil base paint is required. Eggshell finish is preferred. No latex allowed except on existing painted ceilings.

DISD Standard Materials/Colors:
Floor Tile - V816 AZ rock 12" x 12" x 1/8"
Interior oil base enamel semi-gloss paint -
Colors: Pastel yellow Q5-42P
Pastel green Q13-46P
Pastel blue Q9-41P
Off White Q7-56P
(All color numbers are from the "Colortrend Cue" color system used locally by Rodgers Paint Company and Kelly Moore Paint Company.)

9.12
Minimum Carpet Specifications
(See Index of DISD Guide Specifications)

10.01
Chalkboards

a. Three-component type: (composition is acceptable)
   (1) 24 gauge galvanized face steel with porcelain enamel, laminated to
   (2) 7/16" hardboard, with
   (3) .015" aluminum back sheet laminated to hardboard
b. Length - one piece through 16 feet
   Thickness - 1/2"
   Mounting height (elementary and secondary): Chalk rail 24 inches A.F.F.
c. Quantity:
   Elementary: Average 16 L.F. on each of two walls
   Secondary: Average 16 L.F.
   One each of two walls, plus additional on third wall in math lab or other designated rooms.
d. Colors - Black or Dark Green
e. Trim - Extruded aluminum.
f. Accessories - Map rail, chalk trough, flag holder (one per room).

10.02
Tackboards

a. Three-component type:
b. Vinyl cover, over
c. 1/4" corkboard, laminated to
d. 1/4" hardboard
e. Length - one piece through 16 feet
f. Thickness - 1/2"
g. Quantity

Elementary:

(1) Grades Pre K-1: six inches at top of chalkboards, full length of chalkboards, plus 64 sq. ft. (4' x 16')
(2) Grades 2 - 6: six inches at tope of chalkboards, full length of chalkboards, plus 48 sq. ft. (4' x 12')

Secondary:

(1) Grades 7-12: 16 sq. ft. (4' x 4') (near door).

10.03
Markerboards

a. 24 gauge minimum steel base metal plate.
b. Porcelain Enamel Coatings:
   .0025" thick nickel cobalt primer
   .003" thick writing surface
   .0025" thick nickel cobalt ground coat
c. Concealed splice joints for writing surfaces.
d. Colors - white.
e. Trim - extruded aluminum
f. Accessories - map rail, chalk trough
g. Quantity - average 8 l.f. each classroom. Note: provide all markerboards in computer classrooms (in lieu of chalkboards).

10.04
Projection Screens :
Furnish and install manual borderless projection screen with overhead mounting. Verify location of motorized screens where required.

10.05
Display cases (must be recessed into wall)
a. Elementary schools: one near general office.
b. Secondary schools: Two; one near the office, and the other at another location.
c. Locations: hallways as follows - foyer, cafeteria entrance, art classroom area, homemaking classroom area, library area.
d. Type:
   1. Glass sliding bypass openings for hallway side with locks.
   2. Provide lighting.
   3. Minimum of 18" depth.
e. Size: optional.

10.06
Bulletin Boards - in all offices and in corridor adjacent to:
a. General Office
b. Area of Teacher "sign-in"
c. Lounge and workroom area
d. Cafeteria (covered or enclosed)
e. Head Custodian workroom
f. At entrance to corridors/classroom wings.
g. Nurse's office.

10.07
Chair Rails :
Consider a strip mounted at proper height to protect the rear wall from being scratched by the back of student desks.

**Toilet Compartments and Accessories**

10.08
Toilet Compartments
a. Elementary Schools - Floor mounted, braced from ceiling. Solid plastic. Cast steel, chromium-plated, heavy-duty vandal-proof hardware; gravity pivot hinges.
b. Secondary Schools - Consider vandal resistant toilet partition design, i.e., reinforced concrete block braced by angle iron from wall to wall. Provide ceramic tile base for moisture protection.
c. Use DISD guide specification.

10.09
Toilet and Dressing Room Accessories

a. Tissue Holders - big roll at student restrooms; double roll in adult areas.
b. Paper Towel Dispensers - Surface mounted only, required in all Adult Toilet Areas.
c. Hand Dryers - Surface mounted. Do not provide paper towel dispensers in student restrooms.
d. Liquid soap dispensers - Surface mounted.
e. Mirrors (unbreakable) - Mount as appropriate for grade level.
f. Grab bars - Comply with requirements for handicapped and ADA.
g. Robe/Towel Hooks
h. Sanitary Napkin Dispenser - at teacher toilet room; (25 cent operation).
i. Sanitary Napkin Disposal - at teacher toilet room.

10.10
Lockers ( 1 per student)

A. Elementary
Student Personal (Based on grades 5-6 enrollment at 27 students per classroom).
Metal, prefinished.
12" x 12" x 60'
2 tiers at 30" high (single tier in primary area)
4 digits standard industry number system
Lock provision: separate padlock

B. Secondary
Student personal (based on overall enrollment)
Metal, prefinished
12" x 15" x 72"
2 tiers at 36' high
4 digits standard industry number system
Lock provision: separate padlock

C. Provide sloped tops in lieu of "furring in." Provide end panels.

D. Athletic Areas:
(1) Street Clothes Lockers: 12" x 12" x 35" or 48"; one for each student assigned at any one period only.
(2) Gym Clothes Lockers: ventilated 12" x 12" x 12" or 9'; 1.1 for each student enrolled in physical education, assuming 50/50 boy/girl campus enrollment.
(3) Lock Provision: separate padlock.
(4) Kitchen: Appropriate number of lockers are to be provided for kitchen employees for coats and street clothes.

10.11
The main criteria from the Maintenance point of view is to use a heavy gauge steel, such as 16 gauge minimum with baked on enamel finish. Each locker should have door with device suitable for a padlock (no built-in combination locks).

**Miscellaneous Specialties**

10.12
Exterior Graphics

a. School name - (new school only)
b. School Street Number - (for Fire Department Use)
c. Temporary project sign - furnished by contractor (See DISD standard; refer to Table of Contents).

10.13
Interior Graphics

a. Architect should formulate a proposal and provide to DISD for review of the proposed graphics, room numbers and name plates; all are to comply with requirements of the Americans with Disabilities Act (ADA).
b. Number all rooms, including mechanical, toilets, custodian, etc. with consideration of the existing building numbering scheme.
c. Room names for non-typical classroom spaces such as toilets, administrative, library, etc.
d. Teacher's card insert and room number combined for classroom type spaces.
e. Provide vandal resistant mounting.
f. Plaque - new construction and additions only; size 18" x 24" maximum, cast aluminum preferred include project name, construction year, names of board members at any time of award of general contract, name of general superintendent, architect firm and general contractor. ("Rubbing" to be approved by the Board of Trustees.)

10.14
Fire Extinguishers and Fire Extinguisher Cabinets

a. Kitchen area: Carbon dioxide extinguisher mounted on brackets. (No CFC's).
b. All other areas: Dry chemical extinguisher mounted in recessed cabinets. (No CFC's).

11.01

Custodial Room Equipment

A. Storage:
   1. Shelving to allow for tissue and lamp storage.
   2. Allow space for storage carts 36" (W) x 18" (D) x 30" (H).
   3. Allow space for work bench and tool storage cabinets (not in contract).
   4. Locate power transformer elsewhere.
B. Mop Racks
   1. Wall mounted - fabricated metal type preferred.
C. Custodial Sinks:
   1. Service sink to accommodate 12-16 quart mop buckets.
   2. Use floor-basin-type service sinks.

11.02

Gymnasium Equipment (Secondary Schools)

A. Basketball backstops:
   1. Provide fiberglass backstops - for full court play.
   2. Provide two additional sets of wooden backstops for half court play - equip these backstops with manual operative lifting rachet. (Structural support for backstops is required.)
B. Volleyball Inserts:
   1. Anchor into concrete slab beneath gym floor. Install during slab pour. Avoid drilling.
   2. Elementary gymnasium equipment required:
      (a) One set backstops (wood, metal, or plastic)
      (b) One set volleyball inserts.
C. General Gymnasium Considerations:
D. Provide support bar for mats on walls adjacent to basketball backstops.
E. Gym Seating - Secondary: Folding bleachers in quantity to allow for seating of 1/3 of student enrollment preferably locating half on each side of gym in performance gyms. Metal or wood bleachers are acceptable.
E. Gym Seating - Elementary: (none)
F. Provide Impact Protection - Clocks, lights, safety chains in all Metal Halide fixtures in gymnasium.

11.03

Stage Equipment

A. Secondary with Full production Auditorium
   1. Overhead lights - minimum of three rows (bars with individual spots).
   2. Dimmer control both with public address systems amplifier, switch panel and monitor speaker, turntable/recorder with phone input capability. Dimmers for stage and spotlighting only with minimum incandescent hours lights on dimmer (major house light - fluorescent on switches). Dimmer unit to be the type recommended by DISD.
   3. Spotlights for general stage - illuminations (include off stage spots for front stage illumination). Catwalk optional.
   4. Projection screen (overhead mounting). Manual.
   5. Curtain, stage - rear cyclorama, concert, curtain, front curtain, and both side cyclorama, side masking at 6' o.c.
   6. Public address system with alarm signal override.
   7. Provide acoustical treatments, if necessary, for the intended use.
   8. Identify all circuits.
   9. Provide ventilation for control panels and dimmer boards.

B. Elementary with Stage Auditorium
   1. Dimmer control panel - stage and spotlights only. Provide ventilation for control panel.
   2. Spotlights for stage illumination (ceiling or wall mounted).
   3. Projection screen (overhead mounted). Manual.
   4. Curtains: Front curtain, rear cyclorama and both side cyclorama.
   5. Public address system with alarm signal override.
   6. Consider folding partition (WON door STC 38 or equal) when multi-use of stage area desired.
   7. Consider lighting and HVAC requirements.
   8. Stage Curtain and Window will be velour.
   9. Provide Ventilation for control panels and dimmer boards.

11.04

Large Group Seating: Primary and Secondary

| | |
|---|---|
| Auditorium | Large lecture. |
| Seat | Folding seat - self-rising. Plastic by Massey Seating Co., American Seating Co., "or equal." |
| Back | Plastic. |
| Table Arm | As required. |
| Anchorage | Bolt to concrete floor. Allow space for band seating between stage and first row of fixed auditorium seating. |
| Handicapped | Verify exact wheelchair locations. Follow ADA requirements. |

**Food Service**

11.05

Standard equipment lists identifying DISD furnished and contract furnished kitchen equipment. (See Index of DISD Guide Specifications).

11.06

Close coordination of all food service equipment (both furnished in the contract and not in contract) with plumbing, electrical, and HVAC provisions is critical.

11.07
Avoid notes on drawings such as "by others" or by "plumbing contractor," when describing scope of kitchen equipment work in Contract Documents.

11.08
Design fire dampers in the exhaust duct to satisfy building code requirements for kitchen exhaust hood. Furr-in kitchen exhaust hood to the roof, for fire rating.

11.09
Reuse existing equipment where possible and conditions permit.

11.10
Ice machines specified to produce "nugget" shaped ice. "Pillow" shaped ice not acceptable.

## Section III: Technical Design Guidelines

### DIVISION 12 - WINDOW COVERING

12.01
Window Covering - Horizontal window mini-blinds for all glazed openings in exterior walls.

## Section III: Technical Design Guidelines

### DIVISION 14- ELEVATORS

14.01
With a growing consideration for the physically handicapped and, as a requirement of Vernon's Civil Statutes and the Americans with Disabilities Act (ADA), elevator(s) may be required in certain multi-level facilities. It is intended that elevators be designed for not less than two wheelchairs and that the use be restricted to the physically handicapped. Operations should be limited to electro-hydraulic.

14.02
Elevator controls shall be accessible to the orthopedically handicapped. Refer to the City of Dallas Building Code, Vernon's Civil Statutes, Section 7, Article 601B, and the Americans with Disabilities Act (ADA).

14.03
Cab size should not be less than 20 sq. ft.

14.04
A bucket sump with a pump should be provided in all elevator pits.

14.05
Elevator rooms will be not be heated or cooled, only ventilated.

14.06
Provide a light and ladder in pit as required.

14.07
Waterproofing of elevator pits will be required.

14.08
Provide hooks and pads with elevator.

**Energy Efficient Design**

New facilities and applicable renovations should be designed to:

- Require minimum energy consumption to maintain design conditions.
- Permit formulation and application of policies regarding the use of energy consuming equipment.
- Reduce heat transmissions through walls and roof by the use of thermal insulation. U-factor should be 0.10 or less for walls and 0.05 or less for roofs.
- Minimize use of glass at exterior walls, although one operable window per room should be included for use if mechanical ventilation fails or is curtailed. Where practical, utilize solar shading.

The entire ceiling cavity must be properly insulated by means of rigid roof-top insulation (R-20) roof assembly) and by means of insulation in exterior walls (R-10 wall assembly). Insulation on dropped ceilings or filling of CMU cavities with fill are not acceptable. For sloped roofs, where the attic space is ventilated, a separate cavity must be provided for fire sprinkler or other water piping susceptible to freezing. This cavity must be thermally insulated from the ventilaged attic but not from the occupied area below.

Every effort should be made to make any new addition an integral part of the existing building rather than a completely separate building, and to avoid placing fire sprinkler systems in such additions. Instead, horizontal and vertical access, including a fire lane and fire hydrant should be provided. When properly located, such access and hydrant can also provide needed fire protection for at least some of the portable classroom buildings normally found on most campuses.

It is imperative that proper coordination between the various design disciplines be achieved before the drawings and specifications are issued for bidding and construction. Including:

- Verify possible conflicts between light fixtures, sprinkler heads, ceiling diffusers, grilles, speakers, etc.
- Possible conflicts related to clearance needed for ductwork, piping, electrical conduit, light fixtures, etc. within the space between the ceiling construction and bottom of structure above.
- Large mechanical piping should be carefully coordinated with the general construction as required to assure proper support, clearance and accessibility.
- Coordination of piping (plumbing) and switch gear location.
- Coordination of requirements for louvers, equipment, supports, and other items serving mechanical systems but furnished in general construction. Louvers for mechanical rooms must allow adequate combustion air for boilers but not allow freezing of water piping.
- Coordination of rough-in requirements of equipment furnished outside the contract.
- Coordination of site utilities design and interface with building mechanical systems.
- Provision by architect of adequate space for chillers, boilers, air handlers and other MEP equipment.
- Assuring that ceiling and exterior wall cavities are properly insulated and that all water piping in the ceiling and exterior wall cavities are properly protected from freezing.

**Heating, Ventilating, and Air Conditioning**

15.01
The Dallas Independent School District (DISD) requires all instructional spaces to be heated, ventilated, and mechanically cooled except for some shop type spaces and gymnasiums. Building corridors and other major circulation type space will not be mechanically cooled or heated except by overflow from adjacent space. Corridors shall be provided heat at exits to the outside of the building. Multi-purpose rooms which also serve as gymnasiums will be heated and cooled. Designers should locate outside air intakes from boiler exhaust stacks and cooling tower air discharges.

15.02
The DISD is committed to a program of energy conservation in all facilities. An Energy Management System has been incorporated into new buildings and additions, as well as retrofitted into existing buildings. All new and, where appropriate, remodeled building projects should conform to ASHRAE Standard 90A-80 (or latest edition) as related to energy conservation in system design and construction.

15.03
The standard heating, ventilating, and air conditioning system for DISD facilities will utilize single zone air handling units (AHU's) with chilled water coils and hot water coils to provide either cooled or heated air to the classrooms. (Optional multi-zone AHU's may be applicable in specific circumstances.) Individual room temperature control is accomplished by one or more variable-air-volume (VAV) boxes at each room. Each AHU is to be provided with a variable speed drive, modulated by a pressure sensor in the supply ductwork. The system utilizes chilled water from electric driven chillers for cooling and hot water from hot water boilers for heating. Means to supply outside air in accordance with ASHRAE Standard 62-89 shall be provided.

15.04
Provide separate air handling units for zones with differing directional orientations; e.g., provide a separate air handling unit for classrooms with a southern exposure from those with a northern exposure. Provide a separate air handling unit for each area which is to be separately zoned for operation only when required; these areas include the auditorium, cafeteria, multi-purpose room, gymnasium, kitchen, media center, and administrative area. Air handling unit zones should be carefully selected so that areas used in off hours and in summer months can be economically operated. Provide for alternate bid that includes air handling units that shall have 2-inch solid double wall construction for cleaning and to keep insulation out of air stream. Inner walls shall be no less than 20 gauge.

15.05
Provide the administrative AHU with a direct expansion (DX) coil in addition to the chilled and hot water coils, to operate when the central chilled water system is shut down. Locate the condensing unit for this DX coil on the ground rather than on the roof.

15.06
Provide the kitchen AHU (constant volume required by local code) with a DX coil as well as the chilled water coil. Ground mount the condensing unit. Heat, for freeze protection only, is to be provided. Heat shall not be provided in the make-up air unit which serves the kitchen exhaust hood(s). Cooling provided for the kitchen shall be sized to provide tonnage no greater than that calculated on the basis of at least 200 square feet of net usable space per ton of cooling. Net usable space excludes dry storage, and walk-in coolers and freezers. Kitchen hood fire dampers should be designed to satisfy local building code requirements. Provide a convenient location for kitchen hood fan switch to facilitate fan shut-off when not needed.

15.07
Design and specify the HVAC air distribution system to have a sound power rating of NC30 or lower. Specify that sound measurements shall be required to verify compliance.

15.08
Provide one or more variable-air-volume (VAV) boxes for each classroom. Provide the air valve (damper) in each box with an electric operator.

15.09
Provide an electronic sensor (not an adjustable thermostat) in each classroom to modulate the VAV air valve associated with its area. Provide both direct and reverse action for changeover from heating to cooling and vice versa. Classrooms are to be maintained between 72 degrees F and 76 degrees F; 72 degrees F to 74 degrees F heating and 74 degrees F to 76 degrees F cooling, based on DISD policy.

15.10
Provide a direct digital control (DDC) system. The system shall be capable of "stand alone" operation of the building HVAC system and also capable of operation as part of a central energy management system (EMS) located at DISD Maintenance Center.

The stand alone DDC electronic control system shall be BACnet compatible, or the DDC controls supplier shall issue a letter to DISD certifying that they will, for no extra cost, upgrade their system software to be BACnet compatible within 6 months from BACnet's official release.

For building additions, route new DDC wiring back to the existing building HVAC control panel.

15.11
Provide an economizer/vent cycle for each air handling unit. The controls shall be adjustable and operate based on the temperature of the outside air (OA) versus return air (RA). Provide for adequate relief vents when units are in vent cycle. Provide adequate freeze protection for coils.

15.12
Provide electric damper and valve operators. Outside air (OA) dampers should be of minimum leakage type (4 CFM/SF or less at 1 inch differential pressure).

15.13
Provide water cooled, electric driven, helical screw type chillers, utilizing R-22, R-134a, or EPA approved/recommended non-HCFC refrigerant. Chillers should be specified with a performance criteria of no greater than .67 KW/ton at ARI standard rating conditions. At minimum part load, power consumption shall not exceed 0.5kw/ton. Part load performance factors shall be submitted in 10% increments from 20% to 100% of capacity, with condensing water inlet temperatures from 60 degrees F to 105 degrees F in 5 degree increments, and leaving chilled liquid temperatures from 20 degrees F to 60 degrees F in 5 degree increments. For air cooled chillers, the same part load performance factors shall be provided with outside air temperatures of 60 degrees F to 105 degrees F in 5 degree increments, and leaving chilled water temperatures from 40 to 60 degrees F in 5 degree increments. A 4-year extended warranty on the compressor/motor is required.

Note: When existing chillers are replaced that contain refrigerants R-11, R-12, R-113, or R-22, the refrigerant shall be evacuated following the latest EPA required procedures and will remain the property of DISD. Where possible, the District will furnish containers upon appropriate arrangements. This applies to refrigerants only, not to oils or other contaminated equipment/shells/containers/piping, etc. [Exception: R-22 compressors in air-cooled chillers.]

15.14
Provide crossflow or counterflow cooling towers with upflow discharge, propeller fans. Fiberglass basin is preferred. Fans shall be non-slip belt driven with motor out of moisture laden air stream from cooling tower.

15.15
Provide gas-fired, electric spark actuated gas pilot, cast iron sectional type hot water boilers, with power burners of 84% minimum efficiency.

15.16
Provide thermometers and wells (or Pete's plugs) and flow-rate indicating/balancing valves at each coil, and at inlet and outlet of chillers and boilers.

15.17
Provide pressure gauges and valves on each pump suction and discharge and also at inlets and outlets of chillers, boilers, and AHU coils.

15.18
HVAC main and branch ducts shall be galvanized sheet metal; molded fiberglass shall not be used. Flex duct may be used only to connect outlets to branch duct and shall be limited to no more than five (5) feet. Duct shall meet SMACNA standards. Insulate duct on exterior, rather than interior, to minimize growth of airborne bacteria.

15.19
It is not intended that "design conditions" be applied to cooling of kitchens; science labs with fume hood exhaust; gymnasiums; or shops with foundry or dust collection systems. It should not be assumed that all exhausts and heat generating systems will be on simultaneously, or that "comfort" is 72 degrees F. Good judgment and diversity should be utilized.

15.20
Design Conditions:

| | Summer | Winter |
|---|---|---|
| | Outside 100F Dry Bulb/75F Wet Bulb | 18F |
| | Inside 75F Dry Bulb/50% RH | 72F |

15.21
System controls should allow adjustments of operating conditions in the event DISD future policy regarding energy consumption requires higher temperatures (and humidity) in the summer and lower temperatures in the winter.

15.22
Mechanical equipment rooms should be large enough to provide access to all equipment for maintenance, and means to remove and replace equipment must be provided; provide lifting eyes for heavy equipment. Access shall be provided to mechanical equipment room spaces without going through other assigned space. (DISD has found need for 20% more equipment access space than recommended by typical manufacturers.)

15.23
All boilers shall meet city, state, and federal codes. All boilers are opened periodically by the DISD maintenance department so that insurance company state certified inspectors may observe conditions on both the water and fire side. This opened condition may exist for an extended period of time, depending upon schedules; therefore the system should be valved to allow isolation of the boiler.

15.24
Whenever possible, do not use roof mounted HVAC equipment. When use of roof-mounted equipment is unavoidable, provide appropriately sized roof hatch and steel ladder (both to be secured by locks). Pedestrian traffic walkway surface should be provided so that equipment can be serviced without traffic directly on the roof. Provide electrical outlet near equipment for power tools. Provide 18 inch clearance under equipment on roof to allow re-roofing without dismantling system.

15.25
Ground mounted HVAC equipment should be surrounded by a fence (four sides and top) or wall with clearance which is adequate to perform service and maintenance, securable with gate or door, and which will provide the best ventilation and heat disposal possible. An electrical outlet should be provided nearby. Pads should be full size, poured in place.

15.26
Unless special conditions warrant, do not locate HVAC equipment other than VAV boxes above suspended ceilings. Locate VAV boxes (air valves) in the ceiling plenums above corridors, NOT in ceiling plenums above classrooms.

15.27
All restrooms shall have a negative pressure when compared to surrounding rooms. Exhausts adjacent to toilet rooms shall be separate to prevent surrounding transmission. Janitor closets shall have a positive exhaust system.

15.28
Outside air intakes are to be protected with rain-proof louvers with bird screens (1/4 inch hardware cloth).

15.29
Condensate drainhubs shall be located higher than the rim of the lowest fixture in the particular sewer run. Slope horizontal condensate piping for proper drainage, including AHU condensate pans.

15.30
Condenser water piping should be arranged to require minimum removal should condenser "rodding" or tube removal be necessary.

15.31
Chemical pot feeders for closed loop systems should be piped across the discharge and suction of each pump. Flush and treat piping systems per DISD approval. A hose bibb should be installed on the blow-down connection on the strainer.

15.32
A shut-off valve should be provided upstream of the strainer in the supply and return chilled water lines. An air separator with strainer should be installed in the chilled water line. Air valves should be placed in all high places in the piping where air pockets could form.

15.33
Provide closed (bladder type) expansion tanks on suction side of hot water and chilled water pumps.

15.34
Piping expansion joints should be accessible for maintenance.

15.35
All HVAC controls should be accessible for maintenance. Flow switches in water lines should be no closer than two feet from any elbow.

15.36
DX units should have accessible pump-down and charging valves in the refrigerant lines.

15.37
Existing controls (if functional) in existing building should not be modified except as required for repairs by major remodeling or addition.

15.38
All electrical power to HVAC equipment shall be circuited to panels separate from other building systems electrical circuits.

15.39
Evaluate the feasibility of utilizing thermal storage (ice or water) at each school.

15.40
The balancing, testing and adjusting of the HVAC system will be performed by an independent balancing company approved by DISD and retained and paid by the general contractor or directly by DISD. The balancing firm shall be experienced, possessing calibrated instruments, qualified engineers (at least one of whom must be a registered professional engineer) and technicians to perform the required tests. Three sets of the final balancing operation shall be periodically observed and approved by the project consulting engineer. The final balancing report shall be provided to DISD.

15.41
The section for testing and balancing shall be written by the consulting engineer; the section placed in Division 1, with a reference to its location and contractor's responsibilities in Division 15.

15.42
After award of subcontract, the contractor will furnish to the project engineer a list of manufacturers of major MEP equipment for approval based on project specifications. The HVAC control drawing submittal should be approved by DISD before being sent to the contractor for work to begin. In addition, during the review process, DISD should be provided copies of the VAV box submittal and the variable speed drive submittal for approval.

15.43
Record drawings should be maintained at the job site. A complete set of mylar record drawings, and CADD generated tape, prepared by the architect, will be furnished to DISD prior to final payment. (See DISD Guide Specifications on Close-outs in the Index of DISD Guide Specifications).

15.44
Three sets of maintenance and operating manuals, including parts lists, bound in three ring hard binders, will be furnished by the contractor to DISD prior to final payment. (See DISD Guide Specifications on Close-out).

15.45
Design Coordination should include:

a. Conflicts between electrical lighting fixtures and air diffusers, ceiling grilles, ceiling speakers, sprinkler heads, etc., should be avoided.
b. Clearance of ductwork with ceiling construction, structure, recessed lighting, etc.
c. Clearance and accessibility of mechanical system piping and switchgear location.
d. Requirement of louvers, equipment supports, and other construction required for mechanical system but detailed/specified within the general construction.
e. Rough-ins for equipment, both furnished in contract and not furnished in the contract. Do not use the term "furnished by others" in the contract documents.
f. For DISD Maintenance purposes, the following air handling filter sizes should be used: 16" x 20" x 2", 16" x 25" x 2", 20" x 20" x 2", 20" x 25" x 2", or any combination thereof.

15.46
Sequence of Operation, Air Handling Units
Occupied Mode - Temperature Control: When the AHU is scheduled to start by the Energy Management System (EMS), the fan shall start and control routines for maintaining the discharge air temperature setpoint shall be enabled. If morning warm up is required, the morning warm up cycle will be initiated. If no warm up is required, or warm up cycle is completed, the outside air damper shall open to its minimum position. If cooling is required and the economizer mode is enabled by the HVAC, the mixed air dampers shall modulate to maintain setpoint. If the economizer mode is disabled and if the discharge air temperature is above setpoint, the controls shall modulate the chilled water valve to maintain cooling setpoint.

If heating is required, the economizer mode shall be disabled and the hot water valve shall be modulated to maintain heating discharge air setpoint, reset with outside air temperature.

Occupied Mode - Status Pressure Control: During occupied periods, a supply duct static pressure sensor for each AHU will modulate the AHU variable speed drive. PID control loops shall be implemented to maintain a duct static pressure setpoint of 1" w.g. (adjustable). The duct static pressure sensor shall be located approximately two-thirds of the way down the supply duct run to the terminal units served by the AHU.

Heating/Cooling Mode Changeover: Mechanical cooling and heating equipment usage will be per the DISD chiller/boiler district wide schedule/parameters. At no time will both the heating mode and cooling mode be enabled simultaneously.

Unoccupied/Night Set Up Mode: When the EMS goes into this mode, the AHU fan will stop, and the OA damper and valves shall close. Should the space temperature fall below set back setpoint, the fan shall start and the hot water valve shall modulate until night set back setpoint is reached.

Room Terminal Control
Room Terminal Air Valve Control: The room terminal air valve will be modulated by the controls in a direct mode to maintain the cooling setpoint (adj.) during all times scheduled for mechanical cooling or economizer modes. During times scheduled for heating equipment operation, the room terminal air valve will be modulated in a reverse mode by the controls to maintain the heating setpoint (adj.). The mode of operation will be determined by the district wide EMS chiller/boiler operation.

**Plumbing**

**Water Piping**

15.47
Piping should enter each building and rise above the floor slab as soon as possible. Provide cut off on main water line serving each building. Provide latest code approved backflow preventer.

15.48
Piping penetrating exterior walls below grade should be installed in such a manner as to prevent breakage due to building settlement.

15.49
Where possible, avoid under floor water piping.

15.50
Each toilet room or battery of fixtures should have a valved cut-off. Provide stop valves for each fixture. All gang toilet rooms should be equipped with at least one floor drain.

15.51
Access should be provided to all valves and other working parts of plumbing devices as well as to items of plumbing requiring periodic maintenance.

15.52
All mechanical rooms housing air conditioning machinery should have a deep seal floor drain. Minimum size: 4". Avoid locating under machinery. Each such floor drain must be connected to the sanitary sewer and not to the storm sewer system. Avoid locating in return air plenum.

15.53
Overflow drains for cooling towers must be connected to the sanitary sewer and not to the storm sewer system. This includes any overflow sumps below the cooling tower sump.

15.54
Arrange layout of janitor closets to allow the sink to be located near the door.

15.55
All water lines exposed to weather shall be insulated and should be protected from freezing by means of heat tape activated by outside air temperature thermostat.

15.56
Provide surface mounted type electric water coolers with integral chilling units; chilling units shall not be mounted above the ceiling. Specify only units which are certified by EPA as lead free.

15.57
All outdoor drinking fountains should have valves to cut off the supply and drain the line for freeze protection.

15.58
Non-freeze hydrants with removable keys should be located around the building perimeter where applicable at approximately 75 foot intervals.

15.59
Any irrigation system shall be provided with a separate water meter (submeter), downstream from the main water meter, in order to minimize sewer charges.

15.60
Administrative areas (teachers' lounge, toilets, etc.), clinic, showers, janitors' closets and kitchens should be provided with hot and cold water. Student toilet rooms should be supplied with cold water only.

15.61
All connections between dissimilar materials in the piping system should be made with dialectric unions or couplings.

15.62
With the exception of waste piping, piping should not be run under slabs on grade. No piping should be run in concrete floor slabs.

15.63
A 2" high cast-in sleeve or curb should be provided wherever piping (and ductwork) penetrate floor construction (except slab on grade). Install steel wool and flexible sealant around pipes or conduits to prevent insects and rodents as well as air penetration.

**Waste Piping**

15.64
Mains 6 inches in diameter or larger and more than 100 feet in length should have a manhole. A manhole should be installed at the edge of the property.

15.65
Drain slopes should be 1/8" per foot inside the building and 1/16" per foot outside the building.

15.66
Urinal waste lines should be sized to allow entire battery of fixtures (including back to back installations) to operate for a minimum of 5 minutes without throttling stops. All other waste piping should be sized to meet the City of Dallas Plumbing code.

15.67
Provide floor drain(s) and connect to the sanitary sewer (not the storm sewer) in each student gang toilet, janitor's closet, kitchen and mechanical room housing HVAC machinery. Minimum size should be 4 inches.

15.68
Plumbing chases should always be readily accessible; "walk-in" chases should have a minimum clear width of 24 inches. Avoid back to back fixture carriers in "walk-in" chases.

15.69
Minimum elevation of piping at "walk-in" chase entrance should be 6'8".

15.70
PVC piping should not be located under a slab on grade.

15.71
Full line size cleanouts should be located each 50 to 75 ft. of sewer run inside and 100 ft. outside the building and at every change in direction. Provide two-way cleanouts on outlet side of grease traps. Cleanouts should be provided in accordance with good practice and local code.

15.72
All cleanouts located within pipe chases should have a top rim elevation greater than the rim of the fixture of the adjacent toilet room.

15.73
Acid dilution tanks, located under each chemistry lab sink or other location where chemical use is concentrated, should be considered.

15.74
For special vocational programs, consideration should be given to a central acid dilution tank. Acid waste and vent piping may be high glass content cast iron, glass, or polypropylene, or combination thereof, as appropriate.

15.75
Exterior cleanouts should be set in a concrete pad at an elevation to allow a lawnmower to pass over without obstruction.

**Gas Piping**

15.76
To reduce maintenance, gas piping should be located underground only when necessary.

15.77
Gas piping should be run exposed inside the building or in ventilated sleeves at chases and as required by the City of Dallas Plumbing Code, and not run across the roof.

15.78
Where gas demand is high and piping runs long, 5 psi mains should be used if available.

15.79
Install regulators at exterior of building. A test tee with nipple and cap should be provided downstream of each regulator.

15.80
Unions should be provided on each side of each regulator.

15.81
A stop cock should be provided at the meter on each side of each regulator.

15.82
As indicating gas cock should be provided for the boiler and a Jenkins balls valve #30A, or equivalent, on all appropriate appliances, including science tables.

15.83
At labs, route gas piping through teachers demonstration table first (with shut off valve), then on to student stations.

**Storm and Roof Drains**

15.84
Storm drains should be sized per Dallas Plumbing Code. Insulate roof drains to prevent condensation.

15.85
Overflow drains shall not be connected to interior drains. Extend overflow lines to spill outside of building.

15.86
Metering type roof drains should be avoided. Provide relief basins or atmospheric breaks in the roof drain piping outside of the building.

15.87
Roof drain fixtures which cause a water build-up on the roof should be avoided.

**Domestic Water Heating**

15.88
All gas-fired domestic water heaters shall include power venting.

15.89
Separate instantaneous hot water boilers may be used for showers at secondary schools.

15.90
Design temperature for hot water: 120 degrees F.

15.91
A gas-fired booster heater set for 180 degrees F, protected for water failure should be provided for the dishwasher.

15.92
Where cost of hot water piping and related work warrant, and where individual or isolated fixtures require hot water, instantaneous gas-fired water heaters may be provided. (Minimal storage.)

**Showers**

15.93
Tempered water with mixing valve should be provided for gang showers.

15.94
At individual showers, provide tempered water or hot and cold water.

15.95
A master control with cut-off should be provided at boys' and girls' locker room showers located for adequate supervision by P.E. instructors.

15.96
Where applicable, appropriate column type showers may be used at boys' showers only.

**Piping Thermal Insulation**

15.97
Locations should include all hot water distribution piping, hot water tail piece and trap under lavatories for the handicapped, roof drain fixtures and laterals, roof drain risers in non-accessible chases and as required to prevent freezing of any pipe exposed to outside temperatures.

**Utilities**

15.98
Design should permit gravity drainage of sanitary sewage. Pumping of sanitary sewage is not acceptable unless no other alternative exists, in which case the architect-engineer should review with DISD. Where sewage ejector pumps or sump pumps are used, they should be duplex type pumps and be located to allow adequate headroom to remove the pumps from the pits.

15.99
Design should permit gravity drainage of storm water. Pumping of storm water is not acceptable unless no other alternative exists, in which case the architect-engineer should review with DISD.

**Installation Fees**

15.100
Water and Sewer Service: The architect-engineer should contact the City of Dallas as soon as possible to determine the extent of work concerning the new services, to include "evaluated costs" levied by Dallas Water Utilities. DISD should be advised of the findings. All assessment charges required outside of permit fees, etc. will be paid by contingency change authorization.

**Gas Service**

15.101
The architect-engineer should contact the gas company as soon as possible to determine the extent of work concerning the new service. DISD should be advised of the findings.

15.102
Locate the gas meter as close to the building as possible. DISD prefers no underground gas lines on the customer side of the meter. Any charges by the gas company to bring service to the meter will be paid by contingency change authorization.

**Fire Protection**

15.103
An automatic sprinkler system complete with flow and tamper alarms, meeting local and state requirements should be provided in new schools. Provision of such a system in additions and renovations should be reviewed by DISD before commencing design, since access by means of fire lanes and hydrants is the preferred solution.

15.104
The method of protecting all lines from freezing should be considered and reviewed.

**Plumbing Fixture Heights**

15.105
Under Vernon's Civil Statute 678G, School Plumbing Requirements, as published by the Texas Building Commission, the plumbing fixture heights are separated into elementary, middle and high school levels. Incorporate this information, where applicable, in order to conform to the most recent handicapped design requirements.

15.106
The number of plumbing fixtures required should be calculated per code requirements.

15.107
Recommended mounting heights for fixtures in school facilities for compliance with Article 678g, V.T.C.S. are as follows:

| | Elementary | Middle | High |
|---|---|---|---|
| Water Closet - To top of seat | 15" | 15-17" | 17" |
| Urinal - Maximum to Basin Opening | 14" | 16" | 19" |
| Grab Bars - To Center line | 29" | 31" | 33" |
| Lavatories - To Bottom of Apron | 26" | 28" | 30" |
| Mirrors - Maximum to Bottom | 34" | 37" | 40" |
| Shelves and Dispensers - Maximum to Top of Control Devices | 42" | 45" | 48" |
| Drinking fountains - Maximum to Top of Bubbler | 32" | 34" | 36" |
| Switches and Controls that are normally used by occupants - maximum to center line | 42" | 45" | 48" |

15.108
Accessible urinals mounted at the heights listed above are required only when accessible water closets exceed the recommended maximum heights.

15.109
Lavatories mounted at standard heights and/or those with closed fronts (including cabinets) are permitted if adequate and unobstructed space (preferably 60" x 60" minimum) is provided in front of them, and if the center line of the fixture is a minimum of 20" (preferably 24") from the nearest side obstruction. Under these conditions, a side approach for a wheelchair is possible.

15.110
Heights listed are applicable to flush mounted mirrors. tilted mirrors may exceed the recommended heights if they provide equal viewing range.

15.111
Recommendations are consistent with proposed State standards and are based on design criteria developed from various national studies. All heights are measured from finished floor.

15.112
Provide vacuum breakers and backflow prevention devices as necessary.

# Section III: Technical Design Guidelines

## DIVISION 16 - ELECTRICAL

**Electrical Design Concept**

Service: provide underground 277/480 volt, 3 phase, 4 wire service. Size service from utility to main electrical service panel and the panel itself to provide 25 watts per square foot of building space being serviced.

Single Service: one electric meter per campus, except for portable buildings, is required. For new additions, back-feed the new service through the existing service so as to maintain the standard of "only one electricity meter."

Sizing of service: provide for future expansion of teaching stations in new schools of 20% for elementary schools and 35% for secondary schools.

Power wiring in the building: provide 480 volts, 3 phase.

Lighting wiring in the building: provide 27 volt, balanced on all phases, for all fluorescent lighting.

Convenience outlets: provide 120 volt, 3 wire, for all 120 volt receptacles and for small motor loads of 1/4 horsepower of less.

Added design requirements: see Division 16 of Design Guidelines.

**Lighting Design Concept**

Interior Lighting: all interior lighting to be fluorescent; metal halide may be used in areas with high ceilings such as media centers and gymnasiums. Incandescent shall not be used, except for stage spotlights or exit lights if required otherwise by ADA.

Exterior lighting: shall be high pressure sodium.

Fixtures Not to Be Used: four lamp fluorescent fixture and 2' x 2' fluorescent fixture shall not be used.

Standard classroom fluorescent fixture: shall be three lamp with 2 lamp electronic dimming ballast.

Standard fluorescent lamp: for use with electronic dimming ballast is the F40T12CW/RS lamp.

Lighting levels

Added design requirements

Use lighting fixture with favorable coefficients of utilization and maintenance factors, the standard DISD energy efficient fluorescent lamp, and energy efficient electronic fluorescent ballasts.

- Assuring that electrical panels or terminal boards are not located in public spaces or custodian's closets.
- Stacking of electrical closets in two-story (or more) buildings to allow conduit, bus duct, etc. to run vertically in a straight line. Location of electrical closets next to elevator shafts should be avoided to allow better horizontal distribution of branch circuits

**Service**

16.01
Electrical service shall be 277/480 volt, 3 phase, 4 wire on all new projects, subject to confirmation by the Texas Utilities Company. Consider upgrading any existing electrical service that is other than 277/480.

16.02
Size electrical service from utility to main electrical service panel and the panel itself to provide 25 watts per square foot of building space being serviced.
The electrical service need not be increased if an increase in service is not required for the work on the current project.

16.03
All new electrical services should be installed with wiring and conduit for bringing the signal from the meter demand pulse device in the electricity meter enclosure into the building for attachment to the Energy Management System (See Index of DISD Guide Specifications).

16.04
Existing electrical characteristics should be maintained, where feasible, for all additions/renovations. Any new electrical service panel required should be back-fed through the existing electrical service, so that only one electric meter per campus is provided (except for portables).

16.05
Underground service shall be provided.

16.06
Primary electrical service should anticipate a future expansion of teaching stations in new schools:

| | |
|---|---|
| Elementary schools | 25% |
| Secondary schools | 35% |

16.07
The time and duration of any service outage required to complete renovation work or additions shall be coordinated with DISD well in advance of the anticipated outage.

**Distribution System**

16.08
480 volt, 3 phase should be utilized for power wiring where possible.

16.09
277 volt, balance on all phases, should be utilized for fluorescent lighting where possible and permitted by code.

16.10
Dry type transformers shall be used for 120/208 loads.

16.11
120 volt, 3 wire, should be used for 120 volt receptacles and for small motor loads (1/4 hp or less).

16.12
Locations for copy machines should be supplied with both 240V and 120V outlets on dedicated circuits.

16.13
Electrical requirements of all equipment furnished by DISD should be verified, especially heating equipment such as electric ranges in the Home Economics Department, shop and kitchen equipment.

16.14
All HVAC equipment shall be on separate circuits and on separate panels from other building loads.

16.15
Exit lighting shall be circuited separately from other building system circuits, and ahead of the main building service disconnect.

16.16
Parking lot lighting shall be circuited separately from other building loads and provided with a time clock. For additions, add parking lot lighting to existing photo cell and/or time clock parking lot lighting circuits.

16.17
Exterior security lighting shall be circuited separately from other building loads and provided with a photocell and a time clock.

16.18
Conduit should be suspended from the building structure, not from ceiling suspension system. Conduits larger than 1" under the floor slab should be entirely encased in concrete.
16.19 Electrical underground feeders should be encased in red concrete with a minimum cover of 2'-0".

16.20
Flexible conduit should be used for final connection to equipment. Aluminum wiring will not be used.

16.21
Panels should be located in locked rooms; do not locate in corridors or toilets.

16.22
On recessed panels, provision should be made for spare empty conduit into space above the ceiling for remaining circuits available in the panel.

16.23
All panel directories shall be typed.

16.24
Adequate space should be provided for all electrical equipment to allow for access, maintenance, and replacement of parts, etc.

16.25
Provision for lighting protection complying with Underwriters Laboratory, Inc. approved "Master Label" system should be considered for new buildings three stories or higher. Review with DISD and provide written recommendation.

**Lighting System**

16.26
Maintained foot candle levels (calculated using zonal cavity method) should be provided as follows:

a. Classrooms and labs: 50FC
b. Cafeterias: 30 to 40 FC split by switching 1/3, 1/3, 1/3. Row of lights nearest exterior windows should be switched separately for energy savings.
c. Offices: 50FC
d. Corridors: 60FC
e. Toilets: 30FC
f. Gymnasiums: 35FC split by switching 1/3, 1/3, 1/3.
g. Libraries: 50FC
h. Shops: 50FC, with task lighting when needed.

16.27
For energy savings, lighting wattage should be reduced where good practice allows and task lighting should be utilized as much as possible.

Center lights above landings in stairwells or wall mount above landing. Do not place above risers.

16.28
The following light types should be used in various areas:

| | |
|---|---|
| Classrooms | Fluorescent |
| Offices | Fluorescent |
| Cafeteria | Fluorescent |
| Library | Fluorescent |
| Corridors | Fluorescent |
| Gymnasiums | Metal halide |
| Kitchen | Fluorescent |
| Student toilets | Fluorescent |
| Small toilets | Fluorescent |
| Small areas | Fluorescent |
| Exterior security and parking Lighting | High pressure sodium mounted on poles, the height of which meet Dallas Codes |
| Interior floodlights and cut-off type area lighting fixtures | Metal halide, in accordance with Dallas Codes |
| Exit lights | Fluorescent or LED with vandal resistant lenses, unless there is a conflict with requirements to have them flash, in which case, only LED shall be used |
| Auditorium | Fluorescent, metal halide or combination with any incandescent on a dimmer |
| Stage areas | Special lighting to be verified on individual schools |

16.29
Four lamp fluorescent fixtures will not be used. Provide two or three lamp fixtures with electronic dimmable ballasts.

16.30
The DISD standard fluorescent lamp for fixtures equipped with inductive (transformer type) ballasts is F40/CW/RS/SS or WM (2850 lumens). Fluorescent light fixtures in hallways should be placed with the long axis parallel to the long axis of the hallway except in those instances where the hallway is wider than normal.

16.31
For all fluorescent fixtures equipped with electronic ballasts, the DISD standard lamp is F40/CW/RS (3050 lumens).

16.32
When using metal halide lighting, specify lamps which have extinguishing mechanism. Provide two quartz restrike lamps in all such cases.

16.33
Emergency lighting (including exit signs) shall include self contained (NICAD) maintenance free batteries installed in designated fixtures.

16.34
Light fixtures should be suspended from the building structure; the ceiling system should not be used to support light fixtures. The Architect/Engineer should approve the method of supporting fluorescent fixtures including fixtures in an exposed tee system.

16.35
Stem-mounted fluorescent fixtures should have stem spacing at 4'-0" O.C. with stems within 1'-0" from the end of the fixture.

16.36
Exterior fixtures should be mounted above 10'-0" to reduce vandalism.

16.37
Avoid locating light fixtures in canopies and covered walks where they might easily be damage.

**Receptacles and Switches**

16.38
Number of receptacles per circuit should be limited to seven.

16.39
Switches and receptacles should not be located in chalk or tackboards.

16.40
Normal mounting height of switches should comply with state and local requirements regarding access by the handicapped.

16.41
Mounting height of wall receptacles should be 12" above finished floor.

16.42
Receptacles outside buildings in play areas should be mounted at 7'-9" above the ground to reduce vandalism.

**Provision for the Handicapped (including ADA requirements)**

16.43
Exit lights should flash off and on and provide audible warning signals, audible to all areas, when the fire alarm system is activated.

16.44
All other local and state requirements regarding provisions for the handicapped should be followed. Refer to Vernon's Texas Civil Statutes Section 7, Article 601b, and to the Americans with Disabilities Act.

16.45
Switch and receptacle cover plates shall be stainless steel.

**Installation Fees**

16.46
The Architect/Engineer should contact the Texas Utilities Company as soon as possible to determine the extent of work concerning the new service. DISD prefers that service be brought in underground. Any charges will be paid directly by DISD.

16.47
Install telephone conduit with all cable tested and ready for installation of equipment, necessary to provide a complete and workable system.

16.48
Special systems are to be provided as follows (See Index of DISD Guide Specifications):

- Fire Alarm and Detection System
- Clock and Program System
- Telephone Raceway and Cable System
- Public Address and Intercom System
- Television Conduit System
- Building Security System

16.49
Fire or smoke alarm "door holder system" shall be electromagnetic; electromechanical systems are not acceptable.

## Section III: Technical Design Guidelines

INDEX
DISD CONSTRUCTION POLICIES AND PROCEDURES
JULY 1992


| | | |
|---|---|---|
| 1. | Not used | (Incorporated into Volume 1 - Management Procedures) |
| 2. | Undated | List of Schools with Terminal Air Blender (TAB) System |
| 3. | 15 Sep 86 | Site Fire Protection Analysis |
| 4. | Not used | (Incorporated into Volume II- Management Procedures) |
| 5. | 26 Sep 86 | Kitchen Cooling Design Criteria |
| 6. | 29 Sep 86 | DISD Fee Exemption and Zoning Requirements |
| | 5 Mar 87 | DISD SUP, Platting, Fees, Landscape Ordinance Requirements<br>NOTE: City of Dallas subsequently rescinded all exemptions granted DISD from paying of fees. |
| 7. | 8 Aug 89 | DISD List of Acceptable Manufacturers |
| | 24 Jan 90 | Change in Kitchen Exhaust Hoods |
| | 5 Apr 90 | Kitchen Non-Skid Floor Tile |
| | 4 Apr 91 | Changes in Toilet Seats and Pump Shafts |
| 8. | 15 Oct 86 | Landscape Ordinances 18968 and 19237 |
| | 20 Nov 89 | City Modifications to Landscape Ordinance |
| 9. | Not used | (Incorporated into Design Guidelines) |
| 10. | 31 Oct 86 | HVAC Design Criteria for Unit Ventilators, Dampers, Central Systems, All Building Additions, Pneumatic Submittals |
| 11. | 1 Oct 86 | City of Dallas Policies/Construction Inspection Services |
| 12. | 1 Dec 86 | Policy on Foundation Design |
| 13. | Not used | (No longer needed) |
| 14. | Not used | (No longer needed) |
| 15. | Undated | Suggested Clinic Floor Plan |
| 16. | Undated | Media Center Criteria - Elementary Schools |
| 17. | Undated | Dallas Developmental Code - Parking Requirements |
| 18. | 15 Oct 86 | Utility Connections - Completion of New Construction |
| 19. | Not used | (No longer needed) |
| 20. | 17 Mar 87 | Energy Efficient Design Manual |
| 21. | 20 Mar 87 | Memorandums on Telephones and Copy Machines |
| 22. | Not used | (No longer needed) |
| 23. | Not used | (No longer needed) |
| 24. | 27 Feb 87 | MEP submittals to be Reviewed by DISD Facilities |
| 25. | 27 Mar 87 | City of Dallas Vehicular & Pedestrian Safety During Construction |
| 26. | Not used | (Incorporated into Volume II - Management Procedures) |
| 27. | 18 Jan 89 | Notice to Contractors About Asbestos |
| 28. | 18 Jun 87 | Policy for Handling Minor Asbestos Testing and/or Removal Close-out |
| 29. | 20 Nov 85 | Procedure for Calculating Plumbing Fixture Requirements |
| 30. | 23 Jun 87 | Processing of P1Bs and 645 Budget Transfers |
| 31. | 23 Feb 87 | Memorandums on Requirements for Platting |
| | 17 Jun 87 | |
| | 13 Jul 87 | |
| 32. | 20 Jul 87 | Billing for Contingency Allowance Expenditure Authorizations |
| | 11 Dec 87 | |
| 33. | 31 Jul 87 | DISD Policy on Contract Extensions for Adverse Weather conditions |
| 34. | 9 Sep 87 | Texas Requirements for Sealing/Signatures on Engineer Design Drawings |
| 35. | 15 Sep 87 | Copies of Contracts and Their Distribution |

| | | |
|---|---|---|
| 36. | 17 Sep 87 | Processing of Easements |
| 37. | 20 Oct 87 | Kitchens and Health Department Procedures |
| 38. | 8 Dec 87 | Design Guidelines: Single Water and Sewer Services |
| 39. | Not used | (Incorporated into Design Guidelines) |
| 40. | 6 Mar 89 | Landscaping Final Acceptance |
| 41. | 10 Jan 90 | Policies on Window Restoration and Replacement |
| 42. | 22 Jan 90 | Policies on Reduction of Retainage |
| 43. | 25 Apr 90 | DISD Design Criteria and Specs for Computer Labs |
| 44. | 27 Feb 92 | Board Document-Prevailing Wage Rates - 1992 |
| 45. | Not used | (No longer needed) |
| 46. | 31 Oct 90 | Carpet Specifications |
| 47. | 20 Nov 91 | Policy on Connection of HVAC or Other Building Equipment to City Stormwater Lines |
| 48. | 16 Dec 91 | Policy on Disposal of Sodium Chromates and Similar Substances |

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END OF INDEX - 29 JULY 1992

## INDEX
## DISD MASTER SPECIFICATIONS
## JULY 1992

Note: * indicates section to be used without modification.

### A. FORMS AND DOCUMENTS FOR PROJECT MANUAL (SPECIFICATIONS)
"Boilerplate"

1. Project Manual Title Page (1 page)
2. Advertisement for Bids (2 pages)
3. Asbestos Notice (1 page)
4. Instructions to Bidders (pp.1-5)
5. Proposal - Bid form (pp.1-7)
6. M/WBE Construction Bid Specification Language and Forms (B-2 to B-13 and D-2 to D-9)
7. Bid Bond (1 page)
8. Payment Bond (2 pages)
9. Performance Bond (2 pages)
10. Agreement - Owner/Contractor (pp.1-7)
11. Contractor Information and Experience Statement (pp.1-3)
12. Notice on General conditions, AIA Form A-201 - 1987 ( 1 Page)
13. Supplementary General Conditions (SGC 1-21)
14. Special Conditions (SC 1-7)

### DIVISION 1 - GENERAL REQUIREMENTS

a. Section 01020 - Allowance for Construction Contingency
b. Section 01700 - Project Close-out*
c. Section 01720 - Project Record Documents*
d. Section 01730 - Operations and Maintenance Data*
e. Section 01750 - Warranties and Bonds*

### DIVISION 2 - SITEWORK

a. Section 02200 - Typical Earthwork Specification (modify as necessary)

### DIVISION 7 - THERMAL AND MOISTURE PROTECTION

For A Urethane Foam Roof, Add the Following Sections

a. Section 06100 - Rough Carpentry (for roofing).
b. Section 07501 - Special Conditions - roofing
c. Section 07502 - Supplemental Special Conditions - roofing
d. Section 07580 - Urethane Foam Roof System*
e. Section 07600 - Sheet Metal Work

For a coil Tar Pitch 4-ply Built-up Roof Add the Following Sections

f. Section 06100 - Rough Carpentry (for roofing)
g. Section 07600 - Sheet Metal Work
h. Section 07520 - Coal Tar Built-up Roof*
i. Section 07581 - Ten Year Limited Warranty

DIVISION 9 - FINISHES

a. Section 09310 - Ceramic Tile (Thick Set Method)

DIVISION 10 - SPECIALTIES

a. Section 10160 - Toilet Partitions

DIVISION 11 - EQUIPMENT

a Section 11400 - Food Service Equipment

DIVISION 12 - FINISHINGS

a. Section 12300 - Prefabricated Casework

DIVISION 14 - CONVEYING SYSTEMS

a. Section 14225 - Hydraulic Elevators

DIVISION 15 - MECHANICAL, PLUMBING

a. Centrifugal Chillers*
b. Rotary Screw Chillers*
c. Cooling Tower*
d. Air Handler Filter Sizes
e. Variable Speed Drive*
f. Kitchen Hoods
g. R-22 Refrigerant

DIVISION 16 - ELECTRICAL AND LIGHTING

a. Section 16740 - Telephone Raceway and Cable System*
b. Section 16721 - Fire Alarm and Detection System*
c. Section 16770 - Public address and Intercom System*
d. Section 16730 - Clock and program System*
e. Section 16780 - Television conduit and Cable System*
f. Section 16727 - Building Security System*
g. Section 16920 - Electrical Motors*
h. Section ????? - Meter conduit for DISD Energy Management System

**MASTER SPECIFICATIONS AVAILABLE**
**BUT NOT PRINTED AND INCLUDED IN THIS VOLUME**

1. Renovation of Terminal Air Blander (TAB) Systems
2. Stage and Auditorium Draperies and Rigging
3. Steam Trap and Vacuum Pump Replacement

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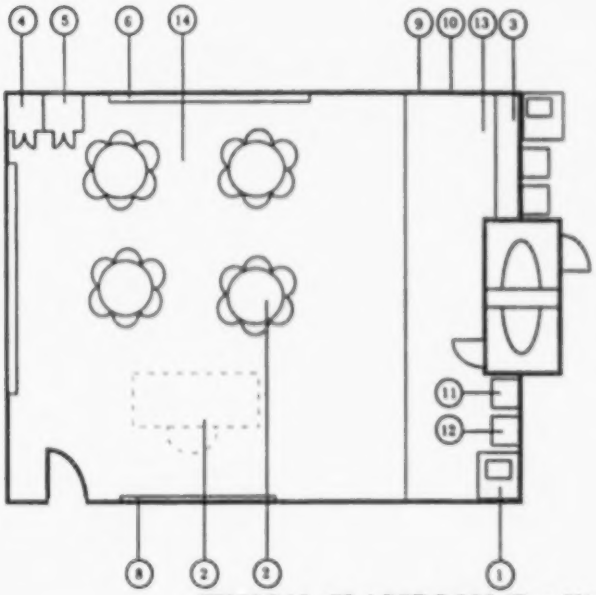
END OF INDEX -29 JULY 1992

## DRAWINGS

| | |
|---|---|
| Typical Classroom | Pre Kindergarten through 1st Grade |
| Typical Classroom | Grades 2 through 6 |
| Elementary School Media Center Plan | Elementary (See Also Criteria listed in index for DISD Construction Policies and Procedures) |
| Typical Elementary School Gymnasium | Elementary |
| Typical Clinic | Not included |
| Prototype Science Laboratory | Middle Schools (Not included, see future addition to DISD Construction Policies Notebook) |
| Prototype Science Laboratory | High Schools (Not included, see future addition to DISD Construction Policies Notebook) |
| Teachers Cabinet/Storage Cabinet | Elementary |
| Classroom Casework | Elementary |
| Coat Storage and Cubicles | Elementary |
| Project Sign | Elementary |
| Typical Plaque | Elementary |

NOTE: The drawings that follow are generic in nature and are intended to be used only as guides. These items are intended to be tools in the design and management process and as such are subject to administrative modifications.




Plan Key
36" high cabinet with sink and flat files
Owner provided furniture
Double Shelf with coathook
36" wide teacher cabinet
36" wide storage cabinet
12' chalkboard
16' chalkboard
12' tackboard
Mini-blinds
Window with one operable sash
Lavatory mounted 24" above finished floor
Bubbler mounted 24" AFF
Vinyl composition tile
Carpet

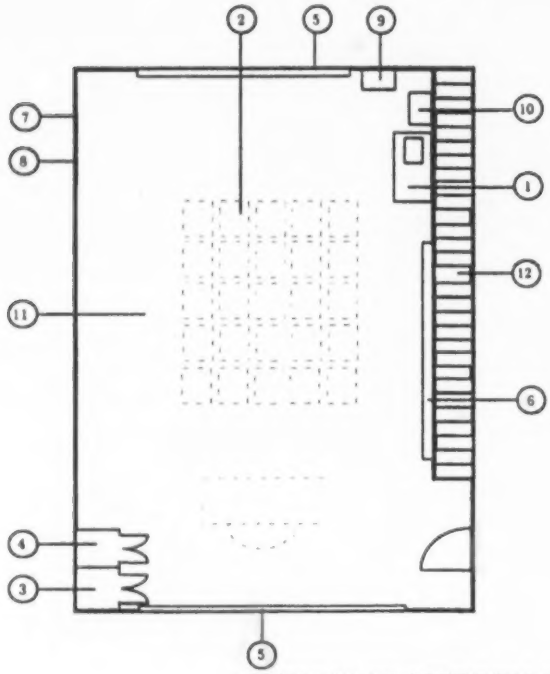
**TYPICAL CLASSROOM (Pre-Kindergarten through 1st)**

No scale

| | |
|---|---|
| Pre-Kindergarten | 900 sq ft |
| Kindergarten | 800 sq ft |
| Grade 1 | 800 sq ft* |

*TEA minimum standard

Notes:
1. Ceiling height 9'-0".
2. Chalk and tackboards will all be 4'-0" high.
3. Chalkboards to have 6" high continuous tack strip at top.
4. Chalkrail mounting heights to be as indicated in design guidelines.
5. REFER TO DESIGN GUIDELINES AND EDUCATIONAL SPACE GUIDELINES FOR VERIFICATION OF THESE REQUIREMENTS AND ADDITIONAL INFORMATION.




Plan Key
36" high cabinet with sink and flat files
Owner provided furniture
36" wide teacher cabinet
36" wide storage cabinet
16' chalkboard
12' tackboard
Mini-blinds
window with one operable sash
Lavatory mounted 24" above finished floor
Bubbler mounted 30" AFF for 2nd grade only
Vinyl composition tile
Lockers - 12" x 12" x 30" high

**TYPICAL CLASSROOM (GRADES 2 THROUGH 6)**

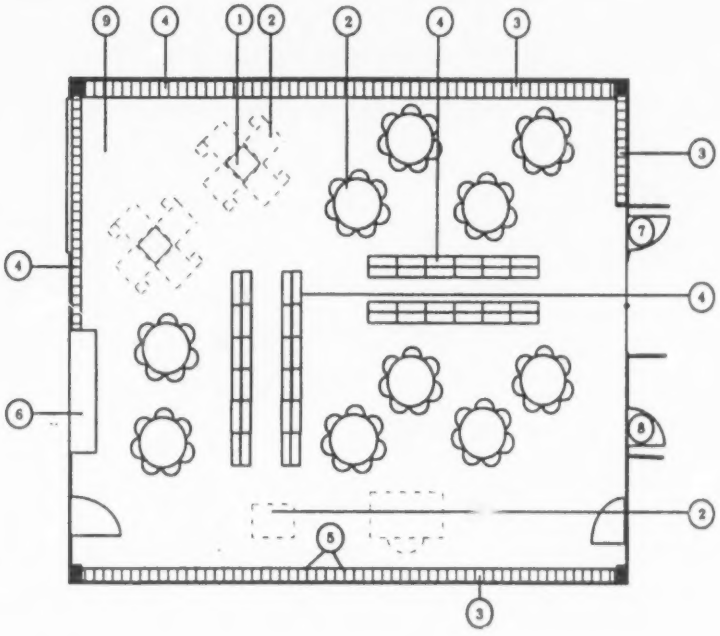
No scale

| | |
|---|---|
| Classroom | 700 sq. ft.* |
| Science Lab | 900 sq. ft.* |
| Computer Lab | 900 sq. ft.* |

*TEA minimum standard

Notes:

1. Ceiling height 9'-0".
2. Chalk and tackboards will all be 4'-0" high.
3. Chalkboards to have 6" high continuous tack strip at top.
4. Chalkrail mounting heights to be as indicated in design guidelines.
5. REFER TO DESIGN GUIDELINES AND EDUCATIONAL SPACE GUIDELINES FOR VERIFICATION OF THESE REQUIREMENTS AND ADDITIONAL INFORMATION.



Plan Key
Computerized check out system
(3,4, or 5 stations depending on enrollment)
Owner provided furniture
84 inch high, 30 inch wide shelving
42 inch high, 30 inch wide shelving
Magazine shelving 84 inches high
Display case
Door to office/workroom
Door to Audio/Visual storage room
Carpet

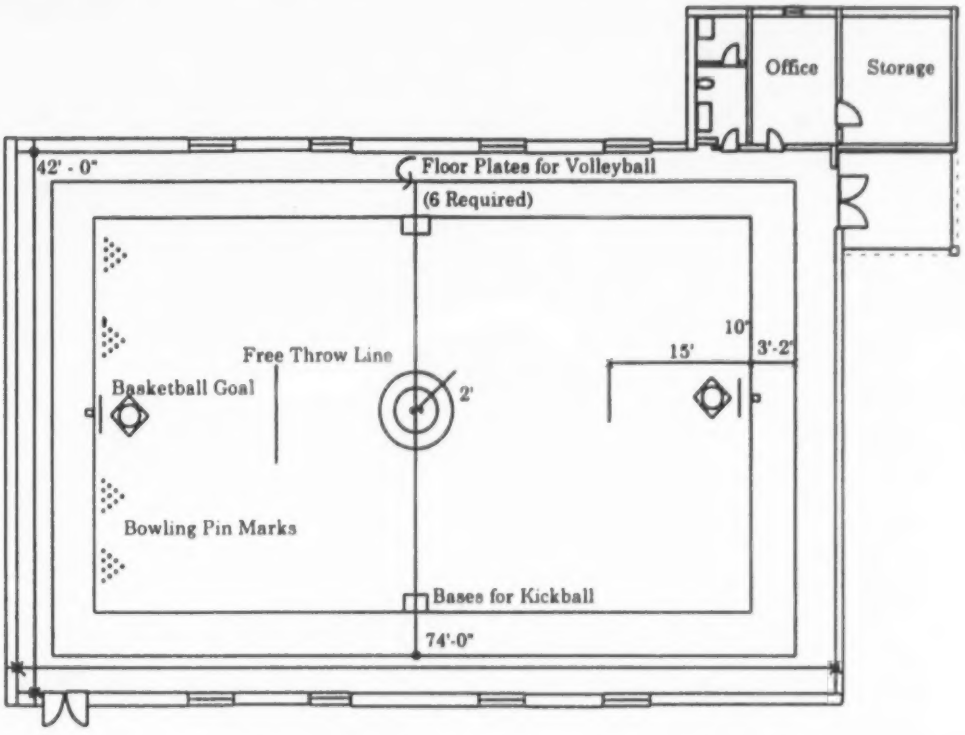
**ELEMENTARY SCHOOL MEDIA CENTER PLAN**

No Scale

TEA Minimum Standard: 1400 sq. ft. or 3 sq. ft. per student of planned capacity, whichever is larger.

In addition to storage of printed and electronic media, the media center provides three instructional areas plus computer work stations. All shelving is 84 inches high except as noted on key plan above. An adjacent office/work room and an adjacent audio/visual equipment storage room are not shown on this plan.

Refer to Design Guidelines and Educational Space Guidelines for verification of these requirements and additional information.




TYPICAL ELEMENTARY SCHOOL GYMNASIUM

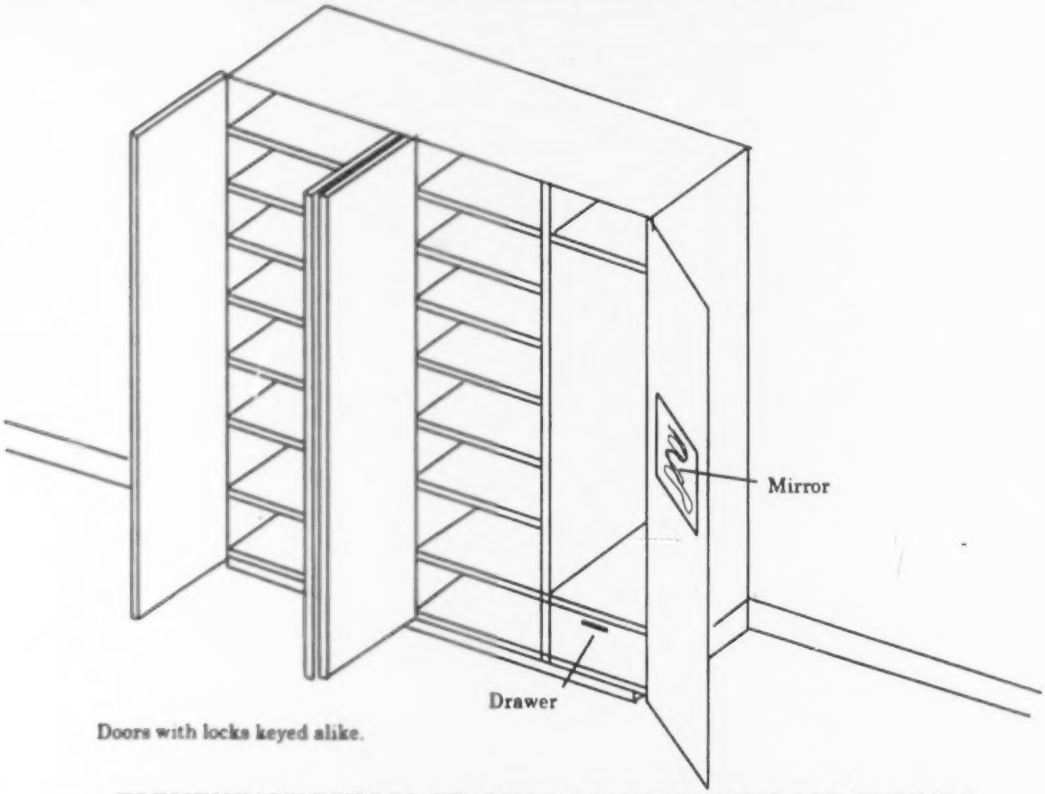
List of Essential Characteristics

1 Location adjacent to outdoor play areas and with no interference of vehicular traffic.
2 Finishes: hard maple flooring, CMU walls, 23' high ceilings of sound absorbing material such as "tectum," with 20' 0" clear ceiling height.
3 High windows
4 Office
5 Storage room with built-in shelves
6 One bulletin board 4' x 8' and one chalkboard 4' x 8'
7 Protective coverings for thermostat, fire extinguisher, and clock
8 Adequate heating, and fans for ventilation during cooling season
9 Safety wall mats (four mats 4' x 6') with velcro strips on three sides and velcro sticks on wall
10 Metal halide lighting with protective covers and safety chains.

Outside Facilities

1 2000 square foot asphaltic paving marked for:
- two basketball courts
- volleyball court
- tetherball poles and marking
- class roll lines
- hop skotch marking
- four square markings

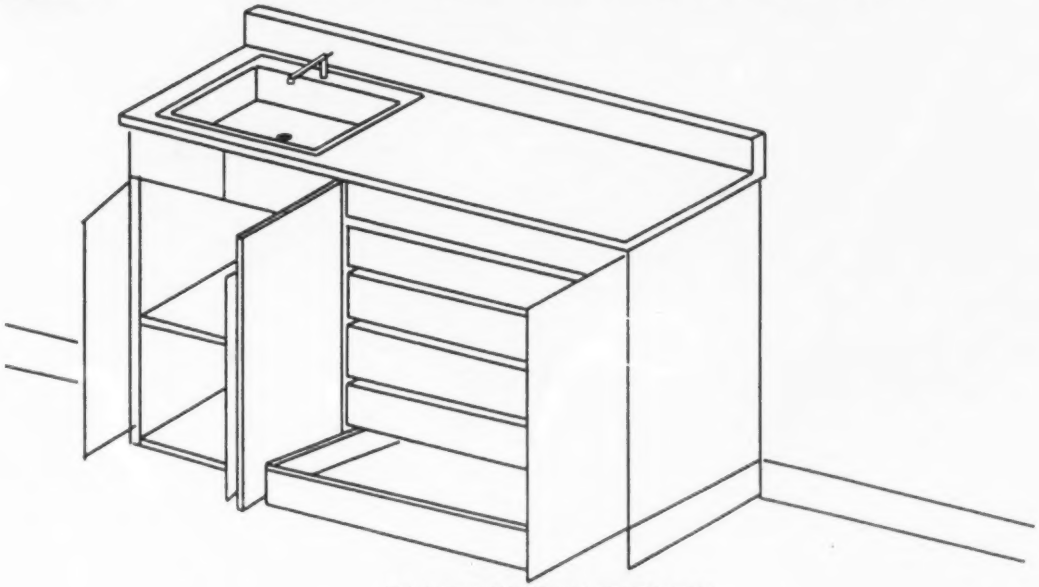
2 Two softball backstops
3 Four soccer goals
4 Three level chinning bar




**ELEMENTARY SCHOOL TEACHER'S CABINET/STORAGE CABINET**

1/2 Wardrobe, 1/2 storage unit, 36" - 42" wide
Storage Unit - 42" wide with adjustable shelves
Units to be 84" high, 24" deep.

Notes:
1. Use commercial grade hardware and locks.
2. Include rod for coat hanger.



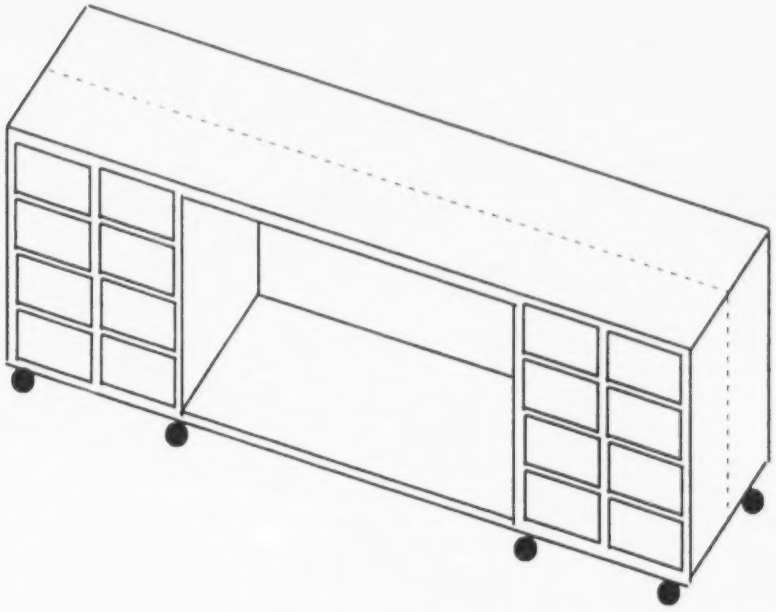
CLASSROOM CASEWORK

36" high counter with single stainless steel sink and paper storage cabinet. 22" x 34" paper.

Plastic laminate at all surfaces.

72" total cabinet width.

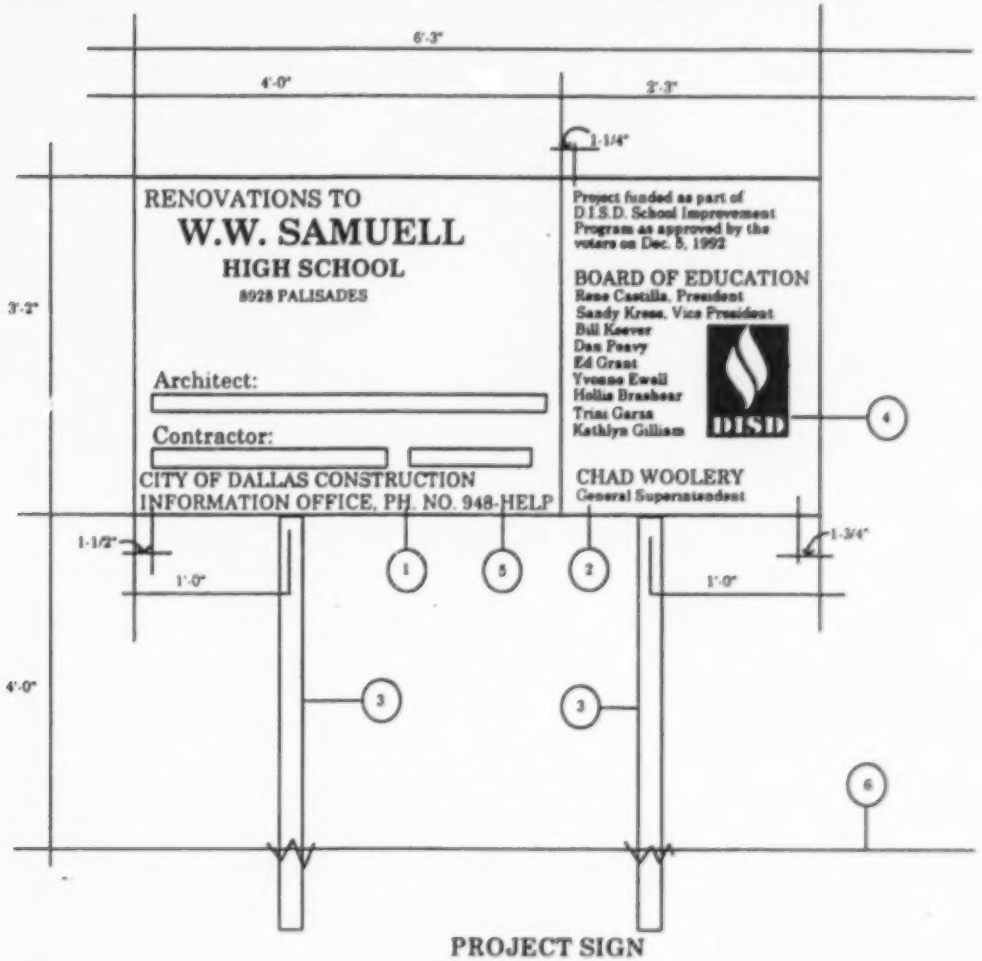
Notes:
1. Use commercial grade hardware.



**COAT STORAGE AND CUBICLES**

Double sided unit with plastic laminate at all surfaces.

30 coats and 32 book cubicles




**PROJECT SIGN**
DISD Standard

No Scale

**Sign Key**

1 P&L #5100 "Postal Blue' Background with White Letters
2 P&L #299-3 'Calibrated Red' Background with White Letters
3 4" x 4" x 11' - 0" Treated Yellow Pine Posts Set 3'-0" in Sand - Paint White
4 8" x 12" Logo Painted White
5 Telephone Number and Extension
6 Finished Grade

**Notes**

1 P&L: Pratt & Lambert
2 Panel: 3/4" M.D.O. Duraply - Paint back of panel P&L #5100 "Postal Blue' - Color to Wrap Edges 1/2"
3 All Letters: Helvetica Medium and Light

All information shall be current and appropriate to the individual project.



BEST COPY AVAILABLE

## Section III: Technical Design Guidelines

### TYPICAL PLAQUE

Size: 18" x 24"

Mt. Auburn School
Addition
1993

Dallas Independent School District

BOARD OF EDUCATION
Rene Castilla, President

| | |
|---|---|
| Bill Keever | Yvonne Ewell |
| Sandy Kress | Hollis Brashear |
| Dan Peavy | Trini Garza |
| Ed Grant | Kathlyn Gilliam |

GENERAL SUPERINTENDENT OF SCHOOLS
Chad Woolery

Architect F & S Partners, Inc.
Contractor Nico Industries